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A Dictionary of Common Fallacies

VOLUME • II

PHILIP WARD

A Dictionary of Common Fallacies

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New York's *Saturday Review*, in discussing the first volume of this major reference book, wrote: "Growing up is a kind of gullible's travels, and we pick up all sorts of untrue beliefs along the way. By the time we're sixteen, our brains are cluttered with misinformation about such idiocies as the *I Ching*, astrology, fire walking, the Indian rope trick, the pope's infallibility, Scientology, lemming suicide, and the Tarot. To clear a kid's mind, give him a copy of Philip Ward's *A Dictionary of Common Fallacies*."

This two-volume set sheds light on hundreds of fallacies in reasoning, mistaken beliefs, false assumptions, and errors that have led to fear and ignorance, prejudice and tyranny, hatred and totalitarianism, and war. The popularizing of education, scientific research, and technological innovation has been matched with a rising tide of occultism and superstition, tales of visitors from outer space, and belief in magic powers. Most daily newspapers and popular magazines publish horoscopes, and major bookstores have special departments for new books on alleged "phenomena."

(continued on back flap)

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PHILIP WARD

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PREFACE

A Dictionary of Common Fallacies deals not only with the narrow field of purely logical fallacies, but also with a number of important ideas or theories common either now or in the past which have been proved wrong by scientific experiment or observation, or are so intrinsically improbable that their widespread acceptance should be questioned.

The Lord ‘fallere’ (to escape from, deceive) gave the Vulgar Latin ‘fallire’ (to commit a fault, deceive, fail), and the adjective ‘fallax’ (deceptive), which provided the English adjective fallacious through ‘fallaciosus’. In classical logic, a fallacy is understood to denote an argument violating the laws of correct demonstration; more generally, it refers to any mistaken statement used in argument, while in common parlance is understood in the even wider sense of a mistaken view which is held by a relatively large number of people in spite of its having been disproved by some form of scientific or logical test.

“For a mind, let us not say exactly ignorant, but shall we say superficial, a work on popular errors might appear quite useless. Why, indeed, he might complain, give the slightest attention, the least emphasis to those daydreams which occupy the brain of the common people, old wives, nurses, and children?” asked Louis Pierre François Adolphe, Marquis de Chesnel de la Charbouclais, in mock despair, before contributing 1360 closely-printed columns of popular fallacies to Migne’s *Troisième et dernière encyclopédie théologique* . . . (Paris, 1856, vol. 20).

Why indeed! As if it were not provocation enough to read newspapers and magazines still containing horoscopes in the 1980s, to see shelf upon shelf of fashionable occult ‘literature’ in otherwise reputable bookshops, fanatic religious sects springing up making claims of miracle-working and Messianity, extremist political groups seeking converts among the badly-educated and the confused, and pseudo-sciences making untestable and incredible claims. However, a

dictionary which exhaustively attempted to examine all the various fallacies which have bewitched, beguiled, and bemused the minds of men (and women) would fill an anti-encyclopedia more voluminous than that of the Marquis de Chesnel de la Charbouclais. The intention of the present work is not so ambitious: it merely offers to anatomize some of those popular beliefs which have been shown to be false by those without a vested interest in deceiving the multitude for power, wealth or prestige.

The compiler has taken to heart the three mildly sceptical attitudes proposed by Bertrand Russell in *Let the people think* (London, 1941, p.2):

- (1) That when the experts are agreed, the opposite opinion cannot be held to be certain;
- (2) That when they are not agreed, no opinion can be regarded as certain by a non-expert;
- (3) That when they all hold that no sufficient grounds for a positive opinion exist, the ordinary man would do well to suspend his judgment.

“These opinions may seem mild”, Russell wrote, “yet, if accepted, they would absolutely revolutionize human life. The opinions for which people are willing to fight and persecute all belong to one of the three classes which this scepticism condemns. When there are rational grounds for an opinion, people are content to set forth and wait for them to operate, In such cases, people do not hold their opinions with passion; they hold them calmly, and set forth their reasons quietly. The opinions that are held with passion are always those for which no good ground exists; indeed the passion is the measure of the holder’s lack of rational conviction.”

There is no sign that impostors, charlatans, and the plain misguided have diminished in numbers since the Middle Ages. The steep rise in population since the Crusades has been accompanied by the fragmentation of a greatly increased quantity of scientific knowledge, so that fewer and fewer possess a clear understanding of a smaller segment of knowledge and their scepticism about their own ‘truths’, healthy as it is, leaves ample scope for the less scrupulous to protest the truth of new ‘religions’, occultist movements varying in integrity and intelligence, pseudo-sciences, and obsessions touted as facts.

Excluded from this catalogue of common fallacies are a

majority of the phenomena generally classified as *hallucinations and delusions* of an individual or of a closely-knit group which are evidently not shared by the generality of mankind; *hoaxes* except insofar as they have led to fallacious conclusions; mere *ignorance* before major discoveries, inventions, or new patterns of awareness pervade the times; *miracles* of the various churches which have a vested interest in advertising the power of their magic or the ease with which they can obtain favours from a deity; simple *mistakes* which are subsequently recognized and rectified; *occult* beliefs, which appeal, however irrationally, to a sector of the consciousness allegedly different from that to which known scientific principles can be seen to apply; *religious systems* which, through their dogma of faith, claim to be immune from the process of verification which is logically applicable to them as to everything else; *superstitions*, which are by their nature irrational and, as their name suggests, constitute survivals of religious systems now abandoned; and *unsolved mysteries*, which are stated with data that are normally either incomplete or prejudiced.

The compiler has not fallen into the predictable trap of believing that his is the whole truth, or even most of it (whatever 'truth' is). He would be very grateful for suggestions as to ways in which the *Dictionary* might be improved by omission, correction, or addition. Describing an idea as a 'common fallacy' does not of course thereby automatically make it so; the intention is merely to reflect the best scholarly opinion currently available and the reader's indulgence is craved for mistakes and distortions which, regrettably, as the book demonstrates, are all too obviously part of the human condition.

This collection of false beliefs and strange errors is offered in humility by one who does not presume to know enough to subscribe to a religion, a political doctrine, or a system of morality. The Bible (I Corinthians) echoes this view ("If any man think that he knoweth anything, he knoweth nothing yet as he ought to know"). So does Islam (The Caliph 'Ali, son-in-law of the Prophet, *salla Allahu 'alayhi wa sallam*): "The truly learned man is he who understands that what he knows is but little in comparison with what he does not know". So does Taoism (Ko Hung): "What one knows is not so much as what one does not know". So does Judaism (Philo, the so-

called Jewish Plato): "The final aim of knowledge is to hold that we know nothing". So does Hinduism (Swami Ram Das): "When you know that you do not know anything, then you know everything". So do the modern mystics, like P.D. Ouspensky: "There is no question of faith or belief in all this. Quite the opposite, this system teaches people to believe in absolutely nothing. You must verify everything that you see, hear and feel. Only in that way can you come to something".

But despite the avowals of ignorance, there seems never to have been any great reduction in the world's intolerance of those claiming an equal ignorance. As the great sculptor Naum Gabo sadly observed, in *Of divers arts*, "You may see a man in the flesh of the humblest of the humble, the meekest of the meek — a man who would cry like a child on seeing the pains and convulsions of a dying worm, yet that same man may appear one day in the habit of a cruel warrior, spreading death and devastation, shedding horror and misery upon the meek, the humble, and the innocent — all in the name of the sacred cause of his own delusions".

This, then, must be the primary justification of any *Dictionary of Common Fallacies*. If we can argue or laugh a man out of his pet errors peaceably, and with a tolerant smile, then we may reduce at least by a smattering the chances of fanaticism, extremism, and absorption in one or more cranky visions which gradually lose any sense of proportion or reality.

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Grateful acknowledgment is due to the authors and publishers of books cited in the appropriate context.

I am grateful to Mr Joe O'Grady of Earls Court (London S.W.5) for sending me J. M. Haffert's *Meet the witnesses*, a propaganda work on behalf of the miracle of Fatima. There is now a 'Blue Army' headquartered in Washington, N.J. 07882, with national centres in many other countries, which assures its adherents that "Russia will be converted and an era of peace conceded to all mankind". The political motivation of the 'miracle' is obvious.

Mr Brian Woolley of Leicester writes to warn readers of volume 1 that, although it is indeed a fallacy that A LIGHTED CIGARETTE WILL IGNITE PETROL (p.193), petrol vapour and oxygen together are of course very dangerous near a lighted cigarette or any form of fire; I believe that this was not made sufficiently clear.

Mr. T. C. Skeat of London has kindly pointed out that I am probably wrong to state that SETTING THE 'THAMES' ON FIRE is a mistake for 'setting the temse on fire'. He cites, very

reasonably, a writer to *Notes and Queries* (8th ser., vol VI, p. 502) and W. W. Skeat's *A student's pastime*, as well as instances of the same phrase, substantially, being applied to the Rhine (in 1638 for example) and to other rivers.

Professor James Maney, of Boynton Beach, Florida, has pointed out an error which eluded the Catholic Truth Society of London and found its way on to p. 129 of volume 1. Professor Maney points out that 'the power of infallibility [of the Pope] has been invoked on one occasion since 1870, specifically in 1950, when Pope Pius XII infallibly proclaimed the dogma (doctrine required for belief by [Roman] Catholics) of the Immaculate Conception, the belief that Mary was conceived without sin in view of her special mission as mother of God'.

Among the subjects omitted from the *Dictionary* are the so-called Holy Shroud of Turin (which is undergoing scientific tests as we go to press), and the so-called Clock fallacy connected with the Special Theory of Relativity, which Professor Ernest Cullwick (formerly of the University of Dundee, now living in Dover) advises may not — at least in the view of some scholars — be a fallacy at all.

Correspondents claiming to square the circle (see volume 1, p. 45) may be interested to know that the reason that the area of a circle can never be calculated exactly is because the formula πr^2 involves the quantity π , which is itself immeasurable.

Several correspondents have based arguments on their belief in the intrinsic value of statistics. Yet, as W. J. Reichmann points out, in his *Use and abuse of statistics* (London, 1961): "statistics, as historical records, illustrate the effects of certain causes whether known or unknown. They have no intrinsic value . . . and are of value only as guides to the causes and effects which they reflect".

Before we condemn 'opponents' in religion, politics, law, nationalism, and social customs, let us share at least between the covers of this book, if nowhere else, the confession of ignorance which Sir Isaac Newton felt called upon to make: "I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, while the great ocean of truth lay all undiscovered before me".

HOW TO USE THE BOOK

- A. Readers not looking for any subject in particular may start anywhere and find cause for amusement or concern, depending on their temperament.
- B. Readers interested in one particular subject should:
 - 1. Look up that name or subject in the INDEXES to volumes 1 and 2. If no reference seems to be present, seek synonyms or heteronyms.
 - 2. Should there be no reference at all, check the PREFACE of either volume for the categories deliberately omitted from the book.
 - 3. Should there be a reference, consult the TEXT of the appropriate volume and, if desired, note the source (where given, either in the entry or the note) for verification.
 - 4. Refer to the BIBLIOGRAPHY for general or specialized studies on fallacies in your field of interest.

A

“The age of miracles is past; the age of miracles is forever here”. — THOMAS CARLYLE.

ATHENS HAS THE ONLY ACROPOLIS

Many Greek cities, whether on the mainland of Greece and Asia Minor, or on the islands, had an *akropolis*, largely for purposes of military defence. One thinks of Tiryns on the mainland, say, or Lindos on Rhodes. *Akros* is the Greek for ‘topmost, highest’, and *polis* means ‘city’, so the akropolis is that upper city which is most easily defended against a besieging force. The example at Athens is merely the best-known of hundreds.

UNLIMITED ADVERTISING IS A SAFEGUARD FOR DEMOCRACY

It is a cornerstone of some capitalist thinking that there should be no restraint on advertising goods and services: that the better goods will be bought by increasing numbers of people, so that the worse will go out of production.

But, as Erich Fromm has argued in *The fear of freedom* (London, 1942, p.111), the methods of advertising “are essentially irrational; they have nothing to do with the qualities of the merchandise, and they smother and kill the critical capacities of the customer like an opiate or outright hypnosis. They give him a certain satisfaction by their daydreaming qualities just as the movies do, but at the same time they increase his feeling of smallness and powerlessness.

As a matter of fact, these methods of dulling the capacity for critical thinking are more dangerous to our democracy than many of the open attacks against it, and more immoral — in terms of human integrity — than the indecent literature, publication of which we punish”.

KING AETHELRED WAS KNOWN TO HIS CONTEMPORARIES AS 'THE UNREADY'

King Aethelred (or, incorrectly, Ethelred) the Second acceded to the throne on 14 April 979 and died on 23 April 1016. He is known generally (see the index to Trevelyan's *History of England*, for example, or the 'English history' entry in *Everyman's dictionary of dates*) as 'the Unready', which is a fallacious mistranslation into modern English of the Anglo-Saxon *unraed*, 'no-counsel', a pun on the meaning of Aethelred, 'noble counsel'.

However, the epithet 'counsel-less' as applied to the King probably "arose in the context of the oral traditions circulating after the Conquest. Certainly there is no evidence that the epithet had any currency in the Anglo-Saxon period, and in this respect it should be carefully distinguished from the epithet applied to Aethelred's son Edmund, 'who was called Ironside because of his valour' according to the 'D' manuscript of the *Chronicle* for 1057; nor is Aethelred's epithet found in the works of the Anglo-Norman historians who were largely responsible for shaping his reputation in written historical tradition". This authoritative statement is reprinted by courtesy of its author, Dr Simon Keynes of Trinity College, Cambridge, from his paper, 'The declining reputation of King Aethelred the Unready' presented to the Millenary Conference, *Ethelred the Unready* and published, edited by David Hill, by British Archaeological Reports (Oxford, 1978). Readers are referred for a fuller account to Dr Keynes's book *The diplomas of King Aethelred II, 978-1016* (Cambridge, 1980, pp. 262-322).

In a personal communication, Professor Henry Loyn of Westfield College (University of London), President of the Historical Association, has stated his belief that Aethelred "was substantially a pretty worthless character". The sources surviving on Aethelred are prejudiced against him for political reasons. Dr Simon Keynes argues that Aethelred does indeed emerge as a pretty worthless character from the available narrative sources, "but that detailed analysis of his diplomas shows (as one would expect) that the situation was far more complicated: in the last analysis, I should like to think that he was a perfectly ordinary man who became the victim of circumstances beyond his control, and whose lack of

extraordinary qualities prevented him (unlike Alfred) from rising above them”.

AFRICA IS A CONTINENT WITHOUT A HISTORY

Georg Wilhelm Friedrich Hegel (1770–1831) is responsible for the above priceless gem of wisdom, which possibly retarded scholarly research on Africa in German-speaking countries for a generation. One might perhaps, in retaliation for Hegel’s compound of bigotry and ignorance, cite the 12,000 events from 1000 B.C. to A.D. 1970 selected by G.S.P. Freeman-Grenville for his 312-page *Chronology of African history* (London, 1973), or R. Cornevin’s multi-volume *Histoire de l’Afrique* (Paris, 1962 ff.), or the multi-volume *Cambridge History of Africa* (Cambridge, 1975 ff.), the fifth volume of which takes us up to 1870.

The fallacy is of the kind: “I am not aware of something, therefore it cannot exist”.

THE ADAGIO OF ALBINONI IS BY TOMMASO ALBINONI

The most famous work attributed to the great Venetian composer Tommaso Albinoni (c.1674–c.1745) is the Adagio in G minor for organ and strings.

In fact, according to Basil Lam in a radio broadcast, ‘The real Tommaso Albinoni’ in *Music Weekly*, B.B.C. Radio 3, 9 December 1979, Albinoni was not the composer of that particular work, and indeed his best music remains almost unknown to the general public. The composer of the ‘Albinoni’ Adagio is actually Remo Giazotto (b.1910), who arranged music by Albinoni just as Stravinsky arranged Pergolesi’s music for *Pulcinella*, for example, and Rimsky-Korsakov produced a completely new version of Mussorgsky’s *Boris Godunov*.

ALGEBRA IS AN INVENTION PARTICULARLY USEFUL TO THE ARMY

We owe to the breathtaking fantasy of Jean de Beaulieu (who of course intended it for fact) the notion that “Algebra is the curious science of scholars, and particularly for a general of an army, or a captain, in order to draw up an army quickly into battle array, and to number the musketeers and pikemen who compose it, without using arithmetic”.

How does the celebrated 17th-century French

mathematician, engineer, and royal geographer arrive at this conclusion? “This science has five special figures: P means *plus* in commerce and *pikemen* in the army; M means *minus* in commerce, but *musketeers* in the art of war; R signifies *root* in the measurement of a cube, and *rank* in the army; Q means *square* [then spelled *quaré* in French] in both commerce and the army; C means *cube* in calculation, but *cavalry* in the army”. And how then might this dual-purpose algebra work?

“As for the operations of algebra, they are as follows: if you add a *plus* to a *plus*, the sum will be *plus*; to add *minus* to *plus*, take the lesser from the greater, and the remainder will be the number required. I say this only in passing, for the benefit of those who are wholly ignorant of it”.

Among whom, presumably, is the Sieur de Beaulieu himself, who indeed goes on to attempt the impossible — squaring the circle — in the same remarkable book. He also wrote *La lumière des mathématiques* (Paris, 1673), and *Nouvelle invention d’arithmétique* (Paris, 1677).

Sources include: Jean de Beaulieu, *La géométrie françoise* ... (Paris, 1676).

THE ALGEBRA OF WILLIAM FREND

William Frend (1757–1841) was a famous Cambridge figure, who denounced the abuses of the Church and was banished (*not* expelled) from the University for sedition and opposition to the Liturgy following his trial of 1792. Though a mathematician of ability, Frend wrote a peculiar treatise, *The principles of algebra* (2 vols., London, 1796–9) in which he refused to use negative quantities in algebraic operations.

Indeed, Frend objected to algebra itself and — in the words of Augustus de Morgan — made “war of extermination upon all that distinguishes algebra from arithmetic”. In this he was following the same line of attack as were Robert Simson (1687–1768) and Baron Francis Maseres (1731–1824).

George Peacock (1791–1858), Lowndean Professor of Astronomy at the University of Cambridge, poked gentle fun at Frend’s *Algebra* for its “great distrust of the results of algebraical science which were in existence at the time when it was written”.

Sources include: Augustus de Morgan, *A budget of paradoxes* (2nd ed., 2 vols., Chicago, 1915).

THERE WAS AN ITALIAN PAINTER CALLED 'AMICO DI SANDRO'

Bernard Berenson (1865–1959) was one of the most stimulating and knowledgeable of all connoisseurs of Italian art.

His attributions were constantly being revised in the light of new discoveries and his own maturing judgement, but of course not all of them have been universally accepted.

Error is an occupational hazard of the art connoisseur no less than of the theoretical scientist. It is of no great importance, and indeed — when recognised as such — can often lead indirectly to new sources of knowledge and understanding. Thus, while writing his early articles for the *Nation*, the *Gazette des Beaux-Arts*, *The Burlington Magazine*, and *The Connoisseur* later collected into the three series of *The study and criticism of Italian art* (1901–16), Berenson felt compelled to invent a personality to fit one drawing and fourteen paintings previously attributed to painters in the circle of Sandro Botticelli. This hypothetical personality he called 'Amico di Sandro' in the hope of discovering his name and other biographical and artistic facts at a later date.

The 'friend of Sandro' was later judged by Berenson himself — somewhat on the principle of Occam's Razor (q.v.) — to be unnecessary, and Berenson made amends for his admitted mistake by reattributing the drawing and pictures "where they belonged, or left with the question mark which Berenson was never afraid of using", to quote Sylvia Sprigge.

Sources include: Sylvia Sprigge, *Berenson* (London, 1960).

AMPHIBOLY

A linguistic fallacy due to double meanings of words, or phrases or sentences including words with double meanings.

Abraham Fraunce, in *The lawiers logike, exemplifying the praecepts of logike by the practise of the common lawe* (London, 1588) defined amphiboly as any case "when the sentence may be turned both the wayes, so that a man shall be uncertayne what waye to take, . . . as that olde sophister the Devill deluded *Pyrrhus* by giving him such an intricate answer: *Aio te, Aeacida, Romanos vincere posse*".

The Latin sentence can be construed both 'I say that the Romans can conquer you' and 'I say that you can conquer the

Romans', Aeacida referring to King Pyrrhus. (This cunning use of the Latin accusative-and-infinitive construction also helps to demonstrate the fallaciousness of a Latin teacher's argument that the correct application of case-endings will wholly prevent ambiguity in a Latin text).

Note further that Fraunce's example is doubly ambiguous by the use of *posse* ('can'), implying that the prediction is equally true if either of the eventualities cunningly prophesied *fail* to occur.

However, I prefer the wartime austerity slogan offered by Irving Copi, in his *Introduction to logic* (2nd ed., New York, 1961) to illustrate amphiboly: SAVE SOAP AND WASTE PAPER.

SOLDIERS HAVE THE SAME AMULETS THE WORLD OVER

A detailed study of American servicemen by social psychologists recorded that Americans normally carry into battle such amulets as crosses, Bibles, four-leaved clovers, rabbit's-foot charms, billikens, kewpie dolls and dice.

Italian troops by contrast were discovered to favour miniature sucking-pig amulets; Japanese soldiers engraved black carp on their sword-guards; and Indian infantrymen preferred animal or human teeth set in gold mounts. All amulets are equally useless in themselves.

Source: Raymond Lamont Brown, *A casebook of military mystery* (Cambridge, 1974).

ANY ANGLE CAN BE TRISECTED

Several thousand mathematicians — most of them amateur — have proved to their own satisfaction (though they have rarely convinced anyone else) that any angle can be trisected. After all, it is simple to bisect an angle, and to divide a line segment into any number of equal parts. It is easy to trisect a right angle of 180° , and — by bisecting the 30° angle — the 45° angle. Many special angles can be trisected, but a general method which can be applied to any angle is impossible. The rigorous proof was first supplied by P. L. Wantzel in 1837, and is expounded for the curious non-mathematician by Richard Courant and Herbert Robbins in their *What is mathematics?*

The impossibility of trisecting an angle has not stopped a

small army from wasting their time: one thinks of William Upton's *Geometry versus algebra; or the trisection of an angle geometrically solved* (The Author, Bath, c. 1849); James Sabben's *A method to trisect a series of angles having relation to each other; also another to trisect any given angle* (2 pages, 1848); the Very Reverend Jeremiah Joseph Callahan's *The trisection of the angle* (Pittsburgh, 1931); and of Maurice Kidjel of Honolulu, whose book — written with K. W. K. Young — called *The two hours that shook the world* claimed not only to trisect the angle but also to square the circle and to duplicate the cube!

Sources include: Robert Carl Yates, *The trisection problem* (National Council of Teachers of Mathematics, 1971); and Martin Gardner, *Mathematical carnival* (New York, 1975, Chapter 19).

CORTE-REAL AND THE STRAIT OF ANIAN

In the year 1500, the Portuguese explorer Gaspar Corte-Real (1450?–1501?) made history (in terms of geographical fallacies) by proceeding from the Azores to Newfoundland and to the St. Lawrence River (which he ventured along for some distance) and calling the St. Lawrence the 'Strait of Anian' in the belief that the waterway connected the Atlantic Ocean to the Pacific. "Thereafter", writes Lt.-Commander Rupert Gould, "the Strait of Anian became an article of faith with geographers — in the sense that they firmly believed in its existence although (as in all matters of faith) definite proof was lacking". Corte-Real was wrecked and lost on his next voyage, but his famous 'Strait of Anian' persisted on the maps of Zaltieri (1566), Mercator (1569) and Frobisher (1578). Some maps even go so far as to imagine a 'Kingdom of Anian' on one or other shore of the fabulous strait.

Burney's *Voyages* adds a further note of fantasy by actually listing travellers who had crossed to the Pacific through the Strait of Anian, a list including Juan Fernández de Ladrillero, Lorenzo Ferrer Maldonado (later discredited *in toto*), a Greek (Phoukos?) known in Spanish as de Fuca, Captain James Lancaster of the East India Company, the Spaniard known as Bartolomé de Fonte, the Englishman Thomas Pêche, and the American Robert Gray.

As late as 1793, William Goldson published in Portsmouth

an extraordinary defence of the Strait's existence in *Observations on the passage between the Atlantic and Pacific Oceans, in two memoirs on the Straits of Anian, and the discoveries of de Fonte*.

Located first of all in the Gulf of St. Lawrence, moved to the zone of the Bering Strait then unknown, and finally placed somewhere along the north-west coast of America, the Strait of Anian invented in 1500 ceased to occupy a place in geographical literature as recently as the early nineteenth century. And who knows: there might be someone who believes in the Strait of Anian even today!

Source: Rupert T. Gould, *Enigmas* (London, 1929, pp. 143–177, with maps).

DERYAGIN AND ANOMALOUS WATER

In the early 1960s, a Russian physical chemist called Boris Deryagin reported to a puzzled scientific press certain unusual phenomena in water condensed from the vapour in fine glass capillaries. His view that the compound H_2O has more than one liquid form was apparently confirmed by the strange behaviour on melting, unusual Raman spectrum, and high viscosity. Hundreds of detailed experiments were carried out in the U.S.A., the U.S.S.R. and elsewhere to explore this discovery; it was argued that it must be a polymer of ordinary water and was accordingly called 'polywater'.

However, there is no such thing as 'anomalous water' or 'polywater'. The anomalous properties of the condensate must have been due to a number of chemical impurities dissolved from the glass: one such impurity was human sweat!

Source: Leland Allen, in *New Scientist*, 16 August 1973, p.376.

ANTIMONY OR 'MONK'S BANE' WAS SO CALLED BECAUSE IT POISONED MONKS

There is an entertaining fallacy concerned with the folk etymology of *antimoine*, the French for 'antimony', 'moine' denoting a monk. The legend goes that the Benedictine monk Valentinus of Erfurt, author of the *Currus triumphalis antimonii* first published in 1624 and translated into English as *Basil Valentine his triumphant chariot of antimony* (London, 1678), discovered common antimony. He found that

the pigs in his monastery enjoyed the plant, and so fed it to his brethren, who expired. The plant was then said to be 'anti-monk'.

Nobody knows the true origin of the name. The best guess of the *Oxford English Dictionary* derives the word from the distant Arabic *uthmud*, but the fact is that we simply don't know.

GREEN APPLES WILL GIVE YOU INDIGESTION

Anything will give you indigestion if eaten too quickly. The fallacy about eating unripe apples probably arose from the greed of little boys who stole the apples before they were mature, straight from the tree, and gobbled them down quickly because they were afraid of being caught and, since it was not yet the apple season, they were avid for apples.

The real cause of their indigestion was the haste with which the food was eaten. Dr. August A. Thomen assures us, in *Doctors don't believe it: why should you?* (New York, 1935), "If an apple is eaten slowly, and sufficiently chewed, the stomach cannot distinguish between a ripe and an unripe one".

APPORTS

In the psychic world that occultists claim we live in, 'apports' are alleged to be material objects transmitted by the will of a medium or psychic from one place to a distant place by means other than those allowed by materialistic science.

The most widely reported 'apport' in the history of the world so far is the Uri Geller — Andrija Puharich banknote case of 1973. *Psychic* magazine published the following words by Geller in their June 1973 issue: "One experiment I did with Andrija Puharich was when he asked me to go to Brazil out of the body. I got to this city and asked a person where I was and he told me it was Rio de Janeiro. Then someone came up to me and pressed a brand new one-thousand cruzeiro note in my hand on the couch by Andrija — to prove I was there".

At last we have a testable story! Every banknote of course carries a consecutive running number, allowing us to date the note with absolute precision. One reader decided to check up on this story, and G. L. Playfair published the results of his investigation for all to read in *The New Scientist* of 14 November 1974.

The 1000-cruzeiro banknotes went into circulation in 1963, so could not conceivably have been 'brand new' ten years later: they were in fact no longer in circulation in 1973. We know that Andrija Puharich himself visited Brazil in 1963, when a 1000-cruzeiro note was worth about 40 pence and thus not worth changing at a bank on departure.

Since G. L. Playfair's deductions were unacceptable to those temperamentally susceptible to claims for the paranormal, the fact remains that psychics and their supporters regularly claim that 'apports' may occur, despite physical laws which seem to rule them out. The crux must lie in the size of the apports. If psychic laws are different from physical laws, and 'apports' are genuine, then the weight and size of the apports should be limitless. In fact — as far as records are available — 'apports' are invariably of a size easily portable by a medium or a medium's assistant, or easily purveyed by a conjuror of normal attainment.

JOHN LOCKE ON ARGUMENTS

In his *Essay concerning human understanding* (London, 1690; ed. by John W. Yolton, 2 vols., London, 1961), John Locke (1632–1704) deals with the imperfections of ideas — clear and obscure, distinct and confused, real and fantastical, adequate and inadequate; with the imperfections of words; and with knowledge and opinion, the last-named comprising Book IV. Perhaps the most cogent passage is one occurring near the end of the chapter 'Of Reason':

"... It may be worth our while a little to reflect on *four sorts of arguments* that men, in their reasonings with others, do ordinarily make use of to prevail on their assent, or at least so to awe them as to silence their opposition.

First, The first is to allege the opinions of men whose parts, learning, eminency, power, or some other cause has gained a name and settled their reputation in the common esteem with some kind of authority. When men are established in any kind of dignity, it is thought a breach of modesty for others to derogate any way from it, and question the authority of men who are in possession of it. This is apt to be censured as carrying with it too much of pride, when a man does not readily yield to the determination of approved authors which is wont to be received with respect and submission by others; and it is looked upon as insolence for a man to set up and adhere to his

own opinion against the current stream of antiquity, or to put it in the balance against that of some learned doctor or otherwise approved writer. Whoever backs his tenets with such authorities thinks he ought thereby to carry the cause, and is ready to style it impudence in anyone who shall stand out against them. This I think may be called *argumentum ad verecundiam*.

Secondly, Another way that men ordinarily use to drive others and force them to submit their judgements and receive the opinion in debate is to require the adversary to admit what they allege as a proof, or to assign a better. And this I call *argumentum ad ignorantiam*.

Thirdly, A third way is to press a man with consequences drawn from his own principles or concessions. This is already known under the name of *argumentum ad nomen*.

Fourthly, The fourth is the using of proofs drawn from any of the foundations of knowledge or probability. This I call *argumentum ad iudicium*. This alone of all the four brings true instruction with it and advances us in our way to knowledge. For: (1) It argues not another man's opinion to be right because I, out of respect or any other consideration but that of conviction, will not contradict him. (2) It proves not another man to be in the right way, nor that I ought to take the same with him, because I know not a better. (3) Nor does it follow that another man is in the right way because he has shown me that I am in the wrong. I may be modest and therefor not oppose another man's persuasion; I may be ignorant and not be able to produce a better; I may be in an error and another may show me that I am so. This may dispose me, perhaps, for the reception of truth but helps me not to it; that must come from proofs and arguments and light arising from the nature of things themselves, and not from my shamefacedness, ignorance, or error".

THE 'MIRACULOUS CURES' OF ZE ARIGÓ

John G. Fuller, in a sensationally-written and credulous book entitled *Arigó: surgeon of the rusty knife* (New York, 1974), has described how São Paulo in Brazil is a centre for doctors who believe in the ideas of 'Allan Kardec'. Kardec (q.v.) a French mystic whose real name was Léon Dénizard Hippolyte Rivail had taught that it is possible for unqualified and unskilled 'doctors' to receive instructions about the symptoms

and treatment of patients through mediums who are in contact with deceased doctors and surgeons. Fuller quotes the following words of Kardec: "The spiritual world is in constant contact with the material world, each reacting constantly on the other. This is what the spirits themselves have dictated. If your reason says 'no', then reject it." [All dogmas bear this same postscript, whether overt or covert.]

The most famous of the Kardecist doctor-surgeons who possess no medical qualifications at all was the late José de Freitas, known as Ze Arigó, who lived in the village of Congonhas do Campo, in the state of Minas Gerais. Arigó, who was sentenced to sixteen months in jail for witchcraft in 1964, claimed that it was not he who diagnosed and treated the ailments of his patients: he was merely the recipient of guidance from a German physician, one Adolf Fritz, who had died in 1918, and was passing his secrets on to Arigó. When asked "Does the voice speak to you in German or Portuguese?", the healer replied, "I always hear it in Portuguese. I don't know German. I don't understand what I'm saying".

The following which Arigó had enjoyed among the Brazilian peasants, who are desperate for any medical treatment in a nation without a free health service, led to his becoming an important figure in the rural communities of Minas Gerais, and his pronouncements were awaited with bated breath. One such edict was that a husband was justified in taking a fresh wife if his first wife smoked a cigarette.

Arigó has been filmed for television. Viewers apparently saw him extract a patient's eye, seemingly without anaesthetic and without the patient's feeling any considerable pain. The healer then seemed to put the eye back in.

A Western doctor familiar with eye surgery, however, cast grave doubt on the 'operation'. He claimed that the eye filmed must have been a rubber demonstration eye used for teaching purposes, since the optic nerve is completely floppy after a real eye is removed, whereas viewers in the film saw a stiff nerve.

Nobody can deny that, by an extraordinary effort of autosuggestion, it is possible for a patient to overcome certain physical disabilities, or to minimise the amount of pain they are suffering. It is equally true that roughly 70% to 75% of all medical problems clear themselves up without any form of medication. But it has not yet been proved that Kardecism

works, that Arigó's 'cures' had any lasting effects, and that fraud in faith healing is always absent.

See also PHILIPPINE PSYCHIC SURGERY.

ARISTOTLE COMMITTED SUICIDE BY DROWNING

One of the two greatest philosophers that classical Greek civilization produced, Aristotle, died in the year 322 B.C., a year after the death of Alexander (one of his pupils) and of his own retirement to Euboea. His *Prior and posterior analytics* ('analytics' being his word for what we know as logic), written probably between 350 and 344, are still available in a handy edition and translation by John Warrington (London, 1964), who has called the book "one of the greatest achievements of the human intellect; [it] served for more than two thousand years as the controlling instrument of western thought in every department of knowledge, human and divine".

There is absolutely no reason for thinking that Aristotle died any other than a natural death according to Ingemar Düring, but Procopius, Justin Martyr and others passed on the mistaken belief that Aristotle drowned himself in the narrow strait of Euripus, separating Boeotia from Euboea by only forty metres or so near the town of Chalkis.

Let the inimitable Sir Thomas Browne take up the story: "That Aristotle drowned himself in Euripus as despairing to resolve the cause of its reciprocation, or ebbe and flow seven times a day, with this determination, *Si quidem ego non capio te tu capies me* ['If I don't understand (*lit.* 'seize') you, you will seize me'], was the assertion of Procopius, Nazianzen, Iustine Martyr, and is generally beleaved amongst us; wherein, because we perceive men have but an imperfect knowledge, some conceiving Euripus to be a River, others not knowing where or in what part to place it . . .".

Sources include: Sir Thomas Browne, *Pseudodoxia epidemica* (London, 1646); and Ingemar Düring, *Aristotle in the ancient biographical tradition* (Gothenburg, 1957).

THE ARK OF THE COVENANT WAS ELECTRICALLY CHARGED

Robert Charroux, in his *One hundred thousand years of man's unknown history* (New York, 1971, translated from the French original of 1963), suggests that the 'Ark of the

covenant' was an electric condenser, a view similar to that of Erich von Däniken in *Chariots of the Gods?* (London, 1969). Charroux cites the *Cours élémentaire d'électricité générale* (1948) by Maurice Denis-Papin, and suggests that the Ark might have contained 'batteries' similar to those on show in the Baghdad Archaeological Museum.

There is, however, no shred of evidence to support any of these assumptions. It is perfectly possible that the simplest known form of electrical cell *might* have been produced near Baghdad during the Parthian period (248 B.C.–A.D. 226), using an egg-shaped pottery jar, a copper cylinder and an iron rod, but the primitive electroplating process possibly thus exemplified would have been virtually useless to the highly intelligent space travellers postulated by von Däniken.

Sources include Albert al-Haik, 'The Rabbou'a galvanic cell', in *Sumer*, Vol.20, 1964, pp. 103-4.

AROMATHERAPY

The fact that sulphur has a smell generally considered unpleasant, and roses have a smell-range generally considered pleasant must not lead one to the arbitrary conclusion that one's health or temperament can be changed by exposure to a particular smell.

Benjamin Walker, in his *Encyclopedia of metaphysical medicine* (London, 1978), does however draw this conclusion. For Mr. Walker, eau-de-cologne creates a mood of purity, musk a mood of sensuality, cloves a mood of suspicion and slander, and bergamot a mood of meditation and piety.

A moment's reflection will show that no amount of bergamot will affect a burlesque show on Broadway, and no amount of eau-de-cologne will change the course of an adulterous affair. *See also* **FLORITHERAPY**.

ASTRO-ARCHAEOLOGY

The fallacy that stone circles are not merely observatories, but also foci of tappable power radiating from the heavens, has become more widespread than ever during the 1970s. There always were ley-hunters, who decided without any satisfactory evidence that a purposeful network of straight tracks crossed much of Europe and that a complex series of megalithic astronomical observatories were linked together.

John Michell's *A little history of astro-archaeology: stages in the transformation of a heresy* (London, 1977) dignifies the ley-hunters by the designation 'astroarchaeologists', dropping the word "ad nauseam into his account of them, as if by sheer repetition he might attain respectability for the term", to quote Alasdair Maclean's review in the *Times Literary Supplement* (4 November 1977). "It is a slim volume, uninterestingly written and heavily larded with poorish photographs and diagrams so reduced in scale as to be robbed of whatever value they might have had. One wonders for whom it was written. Its natural target would seem to be old-straight-track enthusiasts and the like but these today, I fancy, lack the perseverance of Watkins's original followers and are likely to be deterred by the hardcover price and the assumption, however unconvincing, of the trappings of scholarship. The archaeological establishment, on the other hand, will certainly dismiss the book, for the heresy, *pace* Mr. Michell's resounding subtitle, is as far from being transformed as ever".

Private Eye, in a mock advertisement of 1974 derided the pseudo-scientific 'connections' between natural phenomena and mystic meanings:

THE ANCIENT MOLEHILLS OF WESSEX

by Professor Horace Norris

Dr Norris shows how the old molehills of Wessex are linked together by long tunnels, the work, he believes of moles. "*A highly convincing account of Europe's oldest molehills*" — Reginald Maudling . . . £89.

THE ATLANTIC OCEAN IS NARROW

The first fallacy is that we mean the same 'Atlantic' as did the ancient geographers. For us, the Atlantic Ocean is definable as that stretch of water dividing the eastern coasts of the American continent from the western coasts of Western Europe and Africa. Throughout the classical period, however, the term denoted the waters between the western and eastern extremities of the Old World, for they had no conception of the New. Their view that the Mediterranean was the centre of the world pervaded medieval geography up to and including Columbus.

Briefly, in the 3rd century B.C. Eratosthenes of Alexandria solved the problem of calculating a line on Earth by the rules

of spherical geometry, given the measure in units of distance of the length of an arc of a great circle (whether equator or meridian circle) on the Earth's surface. Eratosthenes discovered that at Aswan (then called Syene) the sun is at zenith at noon on the summer solstice, so the town must be situated on the Tropic of Cancer. Measuring the angle between zenith and the noon position of the sun on the summer solstice at Alexandria, he found it to be one fiftieth of a circle, corresponding to 7 and one-fifth degrees. Supposing that Syene and Alexandria were on the same meridian, 5,000 *stadia* apart, the length of a meridian circle (and hence the length of any great circle on the earth) was found by multiplying 5,000 *stadia* by 50, or a total of 250,000 *stadia*. To obtain a number divisible by 360, he added 2,000 *stadia*, a grand total of 252,000 *stadia*, so that by modern units of measurement he estimated the circumference of the Earth at 25,740 miles. It is now known that the Equator measures 24,900 miles, but the high degree of accuracy is only apparent, due to the cancelling out of errors in the original data.

Now Eratosthenes faced the problem of assigning a dimension to the lands then known, and placing them on a map. He assumed that the longest piece of land lay at about latitude 36°N, on the parallel of Rhodes. He estimated — again more by the luck of cancelling errors than by his own geographical knowledge — that the length of the lands along this parallel was enough to stretch through an arc of 130° of longitude. The final figure was again remarkably close to current knowledge.

Columbus did not know of Eratosthenes, but only of Ptolemy, whose mistakes derived from Posidonius (2nd century B.C.) through Marinus of Tyre. Posidonius had shown a difference in latitude of $7\frac{1}{2}$ degrees between Alexandria and Rhodes, corresponding to about 3,750 *stadia*. His arc of the meridian between the two cities was one forty-eighth of the Earth's circumference, the total circumference therefore being $48 \times 3,750$ *stadia*, a total of 180,000 *stadia* and consequently very far from the true figure.

By the time of Marinus, news was available of lands east of India: that is to say, at the easternmost part of the known world. Marinus therefore estimated that the land mass extended through 225° of longitude on the parallel of Rhodes. Ptolemy disagreed, and reduced the estimate of Marinus by half, but he recorded the views of his predecessor, and both

views came down to Columbus, together with the view of the Arab astronomer al-Farghani (known in Europe as Alfragan), transmitted through Roger Bacon and Pierre d'Ailly, that the Earth was actually smaller still. D'Ailly repeatedly asserts that the Atlantic (or western sea) is very narrow, though no specific width is mentioned in his tract (Louvain, 1483), commonly known as the *Imago mundi*.

Columbus paid no heed to the correction of Marinus by Ptolemy, but made his own corrections, narrowing even further the estimated gap between the west coast of Europe and the east coast of 'Asia'. Columbus was impressed by Marco Polo's expansive notions of Asia, and by Portuguese reports of the Azores and the Cape Verde Islands, two factors which combined to reduce once more the estimated width of the Atlantic. Columbus believed the waters to extend no wider than 120 degrees of longitude, or a third of the length of the parallel along which he intended to sail westward. (In fact he sailed roughly on the parallel of the Canary Islands: about 28°N).

If Columbus had believed Ptolemy, he would have been much closer to the truth in planning to cross the wide ocean and would have had to carry far more stores than his ships could bear.

Source: John Leighly, 'Error in geography' in Joseph Jastrow, ed., *The story of human error* (New York, 1936).

ROBERT SCRUTTON AND THE OTHER ATLANTIS

In a literally incredible book entitled *The other Atlantis*, edited by Ken Johnson (St. Helier, Jersey, 1977), Robert J. Scrutton has claimed that there is not only the Atlantis (see volume 1) known from fantasy since the time of Plato, but also a *second* Atlantis that we did not know about.

According to Scrutton, a large semi-circular land mass (a sort of silhouette halo around the North and East of the British Isles), was contemporary with the better-known Atlantis. However, it survived its famous namesake by many thousands of years. Its name was 'Atland' and, although situated between the storm-racked Hebrides and the Greenland 'permafrost' [this notion is itself incorrect — Ph.W.], Atland was no impoverished continent, but enjoyed a sub-tropical climate, yielding all that was required for a con-

tented human life. In the year 2193 a cosmic calamity struck the Earth, in Scrutton's view perhaps that imbalance noted by Velikovsky (see volume 1), or collision with an asteroid. In either event, within three days climatic changes of "overwhelming severity took place. Atland was submerged and her history lost . . . or nearly so".

In 1256 (again to quote the extraordinary pages of Scrutton's book), Hiddo Over de Linda of Friesland recopied all existing material on Atland on to the new cotton-based paper which the Arabs had recently brought to Spain. Copies were made in each succeeding generation so that the secrets of Atland were always available to a select few until 1848, when A. Meylhof (née Over de Linden) handed it to her nephew Cornelius Over de Linden. He decided to allow a copy of the document to be made by Dr E. Verwijs, Librarian of the Provincial Library of Leeuwarden, the provincial capital of Friesland. However, the Frisian Society rudely declined to finance the translation, edition, printing and publishing of *The Oera Linda Book*, stating that in their opinion the document was a hoax.

M. de Jong, in *The secret of the Oera Linda Book* (1927), claimed that Dr Verwijs was the forger, while J. F. Hof believed that Verwijs collaborated with Over de Linden in the fraud, and R. C. J. A. Boles expressed the view that Over de Linden was the sole perpetrator of the whole absurd story. The *Oera Linda Book*, with the original Frisian text, and an English version of Dr Ottema's Dutch translation by W. R. Sandbach, was published by Trubner's of London in 1876. Scrutton even now — unless he has recently changed his mind — assumes the book to be authentic, and says that 'Athens' (yes, the capital of Greece) is a word meaning 'friends' in Old Frisian, and that Athens was a colony of Atland founded by Frisians.

If you need any more, *Secrets of Lost Atland* is announced as a sequel to *The other Atlantis*. Would anyone who actually believes any of it please let us know?

AUBURN ORIGINALLY MEANT REDDISH-BROWN

The Latin 'alburnus' (whitish, nearly white) passed through many forms in English, from the Old French 'alborne, auborne', to reach its present spelling.

It was as late as the 16th century that we find the common

forms like 'abroun' which induced many English-speakers to compare and even to derive the word from the root for 'brown', and thus pervert the original meaning of a colour related to white to that of a colour related to brown.

By the time we come to Scott's *Marmion* (1808), the poet can write (v., ix): "And auburn of the darkest dye, His short curled beard and hair . . .".

Source: *Oxford English Dictionary*.

B

“Believe nothing on the faith of traditions, even though they have been held in honour for many generations, and in divers places. Do not believe a thing because many speak of it. Do not believe on the faith of the sages of the past. Do not believe what you have imagined, persuading yourself that a god inspires you. Believe nothing on the sole authority of your masters or priests. After examination, believe what you yourself have tested and found to be reasonable, and conform your conduct thereto”.—Buddhist Scriptures.

EVERY FIFTH BABY BORN IN BRITAIN IS COLOURED

On 1 February 1978, the London *Daily Mail* used the headline ‘One in five’ babies in Britain are coloured. Following this error (the true figure at the time was nearer one in fourteen), the *Daily Mail* asserted: “12.4 per cent of babies born in this country have immigrant parents . . . 47,096 out of a total of 584,000”. In fact, 12% of 584,000 is 72,400, not 47,096, and many immigrant parents are white.

The *Mail* claimed that there had been substantial undercounting of ‘non-white’ births, but the main reason the newspaper gave for this (a certain estimating technique used by the Office of Population Censuses and Surveys) actually works in the reverse way. The figure for ethnic minorities resident in Britain arising from the 1971 Census had to be revised downward by 130,000 in 1977. “Back in 1969”, wrote the *Mail*, “the Race Relations Board [a body since merged into the new Commission for Race Equality] claimed there would be a dramatic fall in birth figures as immigrants adopted British birth control methods. This has not happened.”

But it has. The tissue of misconceptions and mistakes is too one-sided to be taken seriously by the objective reader: the

conclusion must be drawn that it was written to please a given readership by reinforcing a set of prejudices. On 4 February 1978, the *Daily Mail* was compelled to admit as much, issuing a full retraction for ‘an inaccurate report’, and apologising.

Source: *The Sunday Times*, 5 February 1978.

THERE IS A BALCONY SCENE IN SHAKESPEARE’S *ROMEO AND JULIET*

Shakespeare’s so-called ‘Balcony Scene’ in *Romeo and Juliet* was probably known to him and his fellow-actors and audience as the ‘Orchard Scene’ or the ‘Gallery Scene’. for the word balcony was imported from Italy (*balcone*, a gallery) later in the 17th century. Incidentally, the stress was, as usual in Italian, on the penultimate syllable (as in Marconi), and the 19th-century writer Samuel Rogers complained that “‘cóntemple’ is bad enough, but ‘bálcony’ makes me sick”.

Sources include: Ivor Brown, *I give you my word* (London, 1945).

BYRON WROTE ‘BARABBAS WAS A PUBLISHER’

Authors have gleefully repeated the libel reported as by Lord Byron who, incensed by the great John Murray, sent Murray back a Bible which the publisher had given him, substituting the word ‘publisher’ for ‘robber’ in John, xviii, so that the text read: ‘Now Barabbas was a publisher’. The legend has no foundation in fact, although it is believed that the remark may well have been levelled by the poet Thomas Campbell at another publisher, *not* Murray.

Incidentally, although it is undoubtedly true that some publishers (in particular the notorious ‘vanity presses’) exploit their authors, it is equally true that some authors exploit their publishers, by revoking contracts on the assumption that publishers will not sue, by accepting a higher offer from a different publisher when loyalty might have been expected (H. G. Wells was aggressive in his demands for better conditions and changed publishers many times), and in their stipulations for ever higher advances and royalties. As Audrey Ward has pointed out in *The small publisher* (Cambridge, 1979): “Winston Churchill contracted with Thornton Butterworth for a royalty of 33⅓%: it was Thornton

Butterworth who went bankrupt, in February 1940, not the author”.

Source: Samuel Smiles, *A publisher and his friends* (2 vols., London, 1891).

BASEBALL WAS FIRST PLAYED IN THE U.S.A.

The first game of baseball played under the Cartwright rules was played at Hoboken (New Jersey) on 19 June 1846, but there is a woodcut of “Base-Ball” printed in England as early as 1744, and the Russians too claim to have preceded Americans in playing the game. The ‘Baseball Ground’ in Derby was the scene of experimental baseball games in Britain, but the sport never became popular, and from 1895 the ground has been the home of Derby County Football Club, founded in 1884 and one of the original members of the Football League.

THE BAYEUX TAPESTRY IS A TAPESTRY MADE AT BAYEUX

The ‘Bayeux tapestry’ is not a tapestry at all, but a long embroidered hanging worked in coloured wools on a plain background of bleached linen. It was commissioned by the half-brother of William the Conqueror, Bishop Odo of Bayeux (hence the designation), but it was made, between about 1067 and 1070, in England (where Odo was residing at the time), and not in France, as is commonly supposed.

Signs to the ‘tapestry’ in Bayeux today are to ‘La tapisserie de la Reine Mathilde’, crediting William’s wife Mathilde with the embroidery, an attribution discredited today by all French historians.

Source: C. H. Gibbs-Smith, *The Bayeux tapestry* (London, 1973).

THERE WAS AN ARCHBISHOP OF CANTERBURY CALLED THOMAS À BECKET

The latest edition (the 4th of 1967) of Harvey’s *Oxford Companion to English Literature* repeats, as do most reference books, the name “Thomas à Becket” despite the fact that Dr William Holden Hutton, in his *Thomas Becket, Archbishop of Canterbury* had urged all his readers to stamp

out the intrusive ‘à’ as having no contemporary authority whatsoever.

The saint’s father was Gilbert Becket. Becket himself, who lived from c. 1118–1170, was mentioned in the contemporary *Chronica magistri Rogeri de Houedene* (1154) in the following way: “Theobald, Archbishop of Canterbury, gave Thomas Becket the archdeanery of Canterbury”.

Henry Wharton, in Strype’s *Cranmer*, declares that the ‘à’ is “a small error; but being so often repeated, deserveth to be observed and corrected. The name of that archbishop was Thomas Becket: nor can it otherwise be found to have been written in any authentic history, record, kalendar, or other book. If the Vulgar did formerly, as it doth now, call him Thomas à Becket, their mistake is not to be followed by learned men”.

Source: *The Times*, 6 September 1938.

THE TRUMPETER BUMBLE-BEE’S FUNCTION IS TO SOUND A REVEILLE EVERY MORNING

A Dutchman, J. Gordart, stated in 1700 that every morning a bumble-bee roused the nest by sounding a reveille with its rapidly-beating wings, like an army bugler.

This fallacy was unchallenged until, in the 20th century, H. von Buttel-Reepen proved that the real function of the Trumpeter bumble-bee was the same as that observed in his equivalent among the hive-bees: to ventilate the nest by creating a current of air.

Source: Maurice Richardson’s review article ‘The formic community’, on M. V. Brián’s *Ants* (London, 1977), in *The Times Literary Supplement*, 25 November 1977, p. 1375.

‘BEEFEATERS’ DERIVE THEIR NAME FROM ‘BUFFET’

Mrs Markham’s *History of England* (1823) was, with the same author’s *History of France* (1828), one of the most influential school-books ever written. ‘Mrs Markham’ was the pseudonym of Elizabeth Penrose (1780–1837), née Cartwright. Any errors in ‘Mrs Markham’ were remembered and repeated parrot-fashion for many decades by generations of schoolchildren who learnt nothing better, and there *were* errors in Mrs Markham.

One of the classic mistakes in her *History of England* concerned the 'Beefeaters' of Olde England. Mrs Markham connected their name with the French word *buffet* (sideboard) to invent *buffetier* (a waiter at the sideboard).

Alas for all such picturesque folk-etymology! *The Oxford English Dictionary* takes into account this error and corrects it. The real meaning of 'beefeaters' is, believe it or not, 'eaters of beef', and occurs as early as 1610 with this significance, implying a well-fed menial, who should perform his duties adequately because he is splendidly provided for.

'Beefeaters', in popular parlance, is the term used for the Yeomen of the Guard, in the household of the Sovereign of Great Britain, instituted at the accession of Henry VII in 1485 and also for the Yeomen Extraordinary of the Guard in the reign of Edward VI now known as the Warders of the Tower of London.

DATES 'BEFORE CHRIST' AND 'ANNO DOMINI' HAVE LONG BEEN USED

We began to think in terms of years 'in the year of our Lord' (*Anno Domini*) in Christian Europe as late as 525 A.D., taking up the suggestion of that year from Dionysius Exiguus.

However, years 'Before Christ' were only cited thus as recently as the 17th century, and the first to have used it may have been Jacques-Bénigne Bossuet (1627–1704) in his *Discours sur l'histoire universelle* (Paris, 1681). Bossuet's work is the last in the long series of world histories leading from the Creation by God to the divine choice of the writer's homeland as the culmination of the historical process, a tendency leading to feudal ideas, caste or class divisions, extreme patriotism, and theocentric absolutism. Bossuet was duly rewarded with a bishopric and the lavish rewards of Louis XIV. Voltaire refuted Bossuet's errors in his *Essai sur l'histoire générale et sur les mœurs et l'esprit des nations* (Geneva, 1756), which rejected biblical teleology in favour of a philosophical approach to history, and began the modern school of comparative historiography which replaces divine guidance and Eurocentrism with scientific explanations based on observation and the inclusion of other continents, other ways of life than those immediately familiar to the writer.

JASTROW AND THE VAGARIES OF BELIEF

Joseph Jastrow's books are among the most fascinating ever written on the subject of gullibility and the human propensity to error. However, his classification of errors is less than satisfactory because the seven categories are by no means mutually exclusive.

His first class is Credulity, his examples including Professor Beringer and Sir Arthur Conan Doyle (see volume 1). Then come Magic and Marvel (Theosophy and the cult of the magnet); Transcendence (Ouija Board and Hélène Smith); Prepossession (Thought forms); Congenial Conclusions (Numerology and palmistry); Cults and Vagaries (Psychometry and phrenology); and Rationalization (Auras and ectoplasm).

In fact, one can be credulous, prepossessed towards a congenial conclusion, and at the same time rationalize a cult such as phrenology. There is still no wholly adequate classification of errors apart from the existing classifications of knowledge itself.

THE BYZANTINE GENERAL BELISARIUS WAS BLINDED AND BEGGARED

There is a long-standing tradition that Belisarius, the highly-successful general of the Byzantine Emperor Justinian (527–63), was accused of conspiring against the life of the Emperor, suffered the confiscation of his property, blinding in both eyes, and the indignity of having to beg in the streets of Constantinople with a placard 'Give an obolus [as we might say, a penny] to Belisarius'.

The tradition was fostered by Petrus Crinitus, the Florentine, Raphael Volaterranus, and other authors. "But," as Sir Thomas Browne sagely reminds in the first edition of his *Pseudodoxia epidemica* (London, 1646), "what may somewhat console all men that honour vertue, wee doe not discover the latter Scene of his misery in Authors of Antiquity, or such as have expresly delivered the story of those times. For, Suidas is silent herein, Cedrenus and Zonaras, two grave and punctuall Authors, delivering onely the confiscation of his goods, omit the history of his mendication. *Paulus Diaconus* goeth farther, not onely passing over this act, but affirming his goods and dignities were restored [after one year's imprisonment. Ph. W.].

“Agathius who lived at the same time, declareth hee suffered much from the envie of the Court, but that hee descended thus deepe into affliction, is not to bee gathered from his pen. The same is also omitted by *Procopius* a contemporary and professed enemy unto Justinian and Belisarius, and who as Suidas reporteth, did write an opprobrious booke against them both”.

BELL-RINGING CAN SAVE CITIES FROM LIGHTNING

The Middle Ages in Europe was a period when it was almost ubiquitously believed that the ringing of church bells would diminish the damage done by storms, and even prevent lightning.

Descartes (in *De meteoribus*) and Francis Bacon (in his *Natural history*) both refer to the belief with respect as late as the 17th century, suggesting that the bells may fulfil this function by their concussion of the air!

The main written source of the fallacy is *De gentibus septentrionalibus* (Rome, 1555) by the Primate of Sweden, Olaus Magnus, who declares it a well-established fact that cities and harvests may be saved from lightning by the ringing of bells, and incidentally also by the burning of consecrated incense, accompanied by prayers. The fact that nobody ever reported a case when lightning had *not* been stopped by such measures does not mean that there were no such cases!

BELOMANCY

Divination by arrows. Various admonitions were attached to arrows and then give to archers, who let them fly. The label on the arrow which flew the farthest was then read and, in theory at least, the advice on it was carried out.

Evidence for this form of divination occurs in Sir Thomas Browne's magnificent compendium of vulgar errors, *Pseudodoxia epidemica* (V, 23), where he describes the use of belomancy (Gk. *belos*=arrow) “with Scythians, Alanes, Germans, with the Africans and Turks of Algier”

A moment's reflection will show that one simply wrote a label with the advice that one wanted to follow and gave it to the strongest and most practised archer, much as the modern reader of *Woman's Own* looks up her horoscope, and then follows just that advice which seems to her the most desirable.

AT BELSHAZZAR'S FEAST THE WRITING ON THE WALL PREDICTED THE FALL OF THE KING

'Every schoolboy knows' (if only he *did* know half of what popular writers assume he should!) that, in the fifth chapter of the Book of Daniel, supernatural writing appeared on the wall while the Babylonian King Belshazzar, son of Nebuchadnezzar, was conducting a feast. This writing was 'Mene, mene, tekel, upharsin', interpreted by Daniel in the 6th century B.C. to signify 'God has measured your sovereignty and put an end to it. You have been weighed in the balance and found wanting. Your kingdom has been divided and given to the Medes and the Persians' (version from the Jerusalem Bible, 1966).

It is difficult to find one's way out of this morass of errors, but we must start with the fact that "the traditional belief that the Book was written in the 6th century B.C. by Daniel, one of the Jewish exiles in Babylon, is now almost universally regarded as untenable", according to *The Oxford Dictionary of the Christian Church* (1957, pp. 371-2), which dates Daniel to 168-5 B.C. The Rev. H. T. Andrews, in Peake's *Commentary on the Bible*, writes: "In the Book of Daniel, Belshazzar is represented as king of Babylon just before its conquest by the Persians in 538 B.C. Belshazzar is also described as the son of Nebuchadnezzar. But these statements appear to be erroneous. The statements of historians and the evidence of the inscriptions make it abundantly clear that the name of the king at the time of the Conquest was Nabonidus or Nabuna'id, and that Belshazzar was his son".

The four-word inscription has been interpreted by scholars in two ways: either 'counted, counted, weighed and pieces' or 'a mina, a mina, a shekel, and a half mina' (a mina was a weight equivalent to 50 or 60 shekels). Daniel's rather hopeful personification of these weights was as follows: the mina means Nebuchadnezzar (though it is not clear why his name should be repeated in this context); the shekel Belshazzar (though it is not clear why Belshazzar should be worth one-fiftieth or one-sixtieth of a man who was alleged to be his father, but in fact was not); and the half-mina the Persians, *pharsin* being the plural of Peres (Persian).

This is stuff of which ancient soothsaying and 'wisdom' was made. The modern reader can make his own choice between Hebrew traditions and the sceptical view.

THE BERMUDA TRIANGLE

The vogue for thrillers, detective stories, and the like which has been a feature of European and American literary life since Edgar Allan Poe and Wilkie Collins has thrown up a parallel library of non-fiction 'mysteries', such as the alleged sightings of ghosts, the pseudo-archaeological 'search' for secrets of the Easter Island standing figures or Stonehenge which are not always secrets to those who prefer reading serious, detailed studies by subject experts acknowledged as leaders in the field.

No subject, other than perhaps the 'Holy Shroud of Turin' or 'alien visitors from outer space', has been more surrounded with mystery in recent years than 'the Bermuda triangle'. The book of that title written by Charles Berlitz (with the collaboration of J. Manson Valentine) is only the best-seller: there is a whole *Bermuda Triangle bibliography* compiled by Larry Kusche and Deborah Blouin and published in 1973 by Arizona State University Library.

The hoary legend is that a particular area of the Western Atlantic, near the southeast coast of the United States, has experienced more inexplicable disasters than any other area of the same size. The zone in question is roughly triangular from Bermuda in the north to southern Florida, and in the east to a point passing through the Bahamas past Puerto Rico to a point about 40° West longitude. The authors add, pityingly, that there are "many marine or aeronautical authorities who would observe that it is perfectly natural for planes, ships, or yachts to disappear in an area where there is so much sea and air travel, subject to sudden storms and the multiple possibilities of navigational mistakes and accidents. These same authorities are likely to make the comment that the Bermuda Triangle does not exist at all, and that the very name is a misnomer, a manufactured mystery for the diversion of the curious and imaginative reader".

Certainly, there seems a great deal of disagreement among the mystery-mongers as to where the disaster area is. John Godwin, in *This baffling world* (New York, 1968), called the hoodoo area 'a rough square', while Ivan Sanderson, in *Invisible residents* (New York, 1970), described the zone as after all an ellipse or lozenge, and suggested that there are eleven more such scattered throughout the world's oceans.

Regrettably for the fantasy-spinners, a detailed B.B.C.

television programme by Graham Massey entitled 'The Case of the Bermuda Triangle' (February 1976) and an equally detailed article in *The New Scientist* (14 July 1977) showed clearly—as in all known cases of the 'paranormal' which are capable of being analysed as well as merely stated—that Berlitz's book and similar works suffer by omissions, by the favouring of hypothesis over research, by prejudiced reporting, by ignoring sober witnesses when unbalanced witnesses offer more sensational versions of the same events, and so on.

To give an example cited by Stan Gooch, in *The Paranormal* (London, 1978), the super-tanker *Berge Istra* was reported missing in the Pacific on 29 December 1975. No trace whatsoever was found of this massive ship—one of the largest in the world—not even an oil slick. Air rescue having apparently failed, attempts to locate the missing ship were abandoned on 14 January. Yet on 19 January, two survivors were found by the slimmest of chances, drifting on a raft. The fact they told was that three sharp explosions on the tanker had broken it up so quickly that the *Berge Istra* sank almost at once. How many similar occurrences, one wonders, would have gone unreported for lack of survivors?

The most celebrated Triangle story (described in both *The Bermuda Triangle* and its sequel *Without a trace*) concerns the loss of Flight 19, which set off on a routine training mission from Fort Lauderdale Naval Air Base on 5 December 1945. The weather was fine and no problem was suspected until a quarter of an hour before the five U.S. Navy Avenger bomber aircraft with their crew of experienced flyers were due to land. The story goes that a message then came through from Lt. Charles Taylor: "We seem to be off course . . . we cannot see land . . . we don't know which way is west . . . everything is wrong, strange . . . even the ocean doesn't look as it should . . . it looks like we are . . ." then silence. A rescue aeroplane with 13 men on board immediately took off to look for the bombers, but it too vanished. A widespread air-sea rescue operation failed to discover the six planes or any of the crew.

This represents the 'scary picture' which has sold more than six million copies of Berlitz's books and continues to do so. Now let Graham Massey, of B.B.C. Television's *Horizon* have his say: "Almost everything about this story is wrong. In the first place the strange message from Taylor, on which much of the Triangle mystery is based, never happened: none of the

bases in touch with Flight 19 have it in their comprehensive radio logs; none of the people at the naval base at the time listening to Taylor heard him say such things; even the person whom Berlitz quotes as his first-hand authority for the message, a Commander Wirshing, denies that he heard such a message. The message originates word for word, like so many other Triangle stories, from Vincent Gaddis's article in *Argosy* [in 1964], and Gaddis got it secondhand from a journalist who cannot provide any sources.

"The planes did not disappear at 4.25 in daylight in calm weather as the legend has it, but were still flying after 7.00 p.m. in the dark when the weather had turned stormy with rough seas. The crew men were not 'experienced flyers'—with the exception of Taylor they were trainee pilots, many of them new to the area. The official Navy report reveals that Taylor had completely mistaken his position. He believed that he was flying over the Florida Keys—a chain of islands to the south of Florida; in fact he was over the very similar Bahamas chain to the east. He therefore set a course north and east to return him to base—a course that took him and Flight 19 out into the Atlantic. The planes ran out of fuel and crash landed at night in rough seas. The Avenger's maximum 'surface time' after crash landing is 45 seconds. It's not surprising then that a search that began only hours later, in the dark, should find nothing".

Nor is that all: Berlitz's tale of the disappearance of the Mariner rescue aeroplane is disproved by eye-witnesses on a ship who saw it explode at the time when it vanished on tracking radar. The Mariners are known as 'flying gas tanks' because of the large amount of fuel they carry, and any careless or unlucky spark can cause an explosion. Berlitz says that the Mariner in question took off and disappeared around 4.25—some three hours before it actually left base!

Critical readers are indebted to Lawrence Kusche's book *The Bermuda Triangle Solved*, which provides disproof of more than 50 legends of the 'Bermuda Triangle'. It is as well that disproof exists, for the U.S. 7th Coastguard district morale would be low indeed if unexplained losses occurred at a very high rate. In fact, in 1976 28 vessels were lost off the U.S. coast, but only six of them were in the Triangle area. Lloyds of London confirm that there is no evidence that the Triangle is a disaster area: no commercial airliner was lost

over the Triangle in the decade prior to the publication of *Without a trace*, and the safety record of airliners in the Triangle is actually *better* than that over the continental United States.

What else does Berlitz get wrong? Well, the Greenbank conference on extraterrestrial intelligence did *not* state that 40 or 50 million worlds are trying to signal us or to hear messages from Earth. It is *not* conclusively proved that Atlantis has been found off Bimini (or anywhere else for that matter). The U.S. Navy and the Soviet Navy are *not* combining to explore the Triangle. And the reported landing of a UFO in Hudson City Park, New Jersey, is *not* evidence for the existence of a fatal zone off the shores.

Sources include: Lawrence Kusche, *The Bermuda Triangle mystery solved* (London, 1975); and Graham Massey, 'The meretricious triangle', in *New Scientist*, 14 July 1977.

THE BLACK DEATH WIPED OUT MOST OF THE POPULATION OF BRITAIN AND DESTROYED THE MANORIAL SYSTEM

Schools still commonly teach out-of-date 'facts' about the severity and consequences of the Black Death in the 1340s.

Though mortality was high, some areas suffered much more gravely than others and, over the country as a whole, only a third of the population at most died of the plague. And, while some villeins did indeed leave their manors at the time, and there was a demand for high wages, as is shown by the Statute of Labourers enacted in 1349 (and another in 1357), manor accounts and court rolls prove the continuance of the manorial system. F. W. Brooks states that "there is practically no difference between a manor account or court roll of 1340 and one of 1360". The fallacy that the Black Death caused a sharp increase in sheep farming is refuted by the records. As late as the 16th century, sheep-rearing seems to have been based more on a large number of small flock masters than on a small number of large flock masters. There is no justification for the widely-held belief that the plague led to the amalgamation of holdings either in the lord's hand, or by tenants.

The late Professor Elizabeth Levett concludes: "The attack of the pestilence was sharp and widespread, though irregularly distributed, but its effects were shortlived".

Sources include: Elizabeth Levett, 'Black Death on the Estates of the See of Winchester' in *Oxford Studies in Social and Legal History*, vol. V; and F. W. Brooks, 'The economic consequences of the Black Death' in *Historical Association, Common errors in history* (2nd ser., London, 1947).

BLIGH OF THE BOUNTY WAS A TYRANNICAL CAPTAIN

We are all indebted to Gavin Kennedy for refuting the above fallacy with unquestionable documentation in his book *Bligh* (London, 1978). The mutiny on the 'Bounty' which took place on 28 April 1789 resulted not so much from any failure on the part of William Bligh, a commander who had learnt his seamanship under Captain Cook, as to serious overcrowding on the 215-ton 'Bounty', a shortage of proven men, and the mental breakdown of Fletcher Christian.

Christian's collapse was due not to persecution by Captain Bligh, according to the evidence now adduced by Dr Kennedy, of the University of Strathclyde, but to his own mental instability. Christian talked of taking a raft through a shark-infested sea to a shore thirty miles away, and "had tied a heavy weight round his neck to bring a speedy end to his life if the mutiny failed and he had to jump over the side". Dr Kennedy indicates the ways in which Christian's powerful family tried to exculpate Christian by defaming Bligh, and how most subsequent writers on Bligh "accepted the partisan rumour-mongering of the mutineers and other survivors". The mutiny is attributed to Christian's resentment after Bligh had pointed out the inadequacy of Christian's performance as acting lieutenant. Christian had an instinct to run from trouble instead of controlling it, resorted to unnecessary violence, and treated the Tahitians in an "appalling" manner.

BLUE STOCKINGS WERE ONCE WORN BY LADIES OF INTELLECTUAL PRETENSIONS

About 1750, a few ladies grew tired of the endless round of cards, gossip, and intrigue in London society. Mrs Montague, Mrs Vesey and Mrs Ord were among those who acted hostess to those (such as eminent men of letters) interested more in literary themes.

Many who attended such serious evening parties disparaged

the full formal dress of the period, and appeared in plain, simple worsted as a form of protest. Mr Benjamin Stillingfleet, who habitually wore grey or 'blue' worsted, instead of the black silk stockings usual in society, was a particular butt. Sir W. Forbes, in his *Life of Beattie* (1806), quotes Admiral Boscawen as jeering at 'the Blue Stocking Society' but of course he was jeering at a *man* (Stillingfleet), and the usage 'Blue Stockingers', later 'Blue Stocking Ladies', 'Bluestockings' and 'Blues' referred to all who attended such gatherings, and had no (accurate) reference to the attire of the ladies. Hazlitt wrote in 1882: "I have an utter aversion to bluestockings"; and in his autobiography de Quincey referred to "The utter want of pretension, and of all that looks like Bluestockingism, in the style of her habitual conversation". The term has become a form of sexist abuse aimed at women, when it was in fact coined by a man about another man.

Sources include: *Oxford English Dictionary*.

THE HUMAN BODY IS RENEWED EVERY SEVEN YEARS

Professor Sir J. Arthur Thomson writes: "This is what is meant by a credulity—almost universally accepted and yet a nonsensical guess. In a way, the biggest fact about a living body is that it is always changing. It is continually breaking down and almost as continually being built up again . . . Some tissues, like bone, change slowly after growing stops; others, like those of the liver, the seat of bustling activity, change very rapidly . . .

What, then, is the credulity? It is in fixing the time of replacement at seven years. There is no warrant for this arbitrary estimate, which was doubtless based on the fact that seven is the perfect number".

Source: J. Arthur Thomson, *Scientific riddles* (London, 1938).

I'VE GOT A FEELING IN MY BONES

Are you sure?

LIZZIE BORDEN GAVE HER MOTHER FORTY WHACKS

She might have, according to the popular chant:

‘Lizzie Borden took an axe
and gave her mother forty whacks.
When she saw what she had done,
she gave her father forty-one.’

But surely the crucial fact is that her jury acquitted Lizzie Borden of the murder of her parents, after retiring for just over an hour. In *Lizzie Borden: the untold story* (1961), Edward D. Radin accuses the maid Bridget of the crimes, though many people were persuaded of Lizzie’s guilt by Edmund Pearson’s *Trial of Lizzie Borden* (1937).

LUCREZIA BORGIA WAS A WOMAN OF UNPARALLELED EVIL

A victim of the ‘Good Kings’ and ‘Bad Kings’ labels pilloried so wittily in Sellar and Yeatman’s comic history of England *1066 and all that*, Lucrezia Borgia was of course neither wholly evil nor wholly good. “That murderous maenad who is the heroine of Victor Hugo’s play and Donizetti’s opera no more resembles the historical personage whose name she bears than the ridiculous figures carried about our streets on the fifth of November resemble the real Guy Fawkes”, writes John Fyvie in *The story of the Borgias* (London, 1912). “At the same time there is no warrant whatever for the bold assertion of a Roman Catholic apologist that Lucrezia Borgia is now proved to have been a lady of lovely and unblemished character”.

Ferdinand Gregorovius, in his *Lucrezia Borgia* (London, 1948, following the German edition of Stuttgart, 1874), states: “Among Lucrezia’s accusers only those who were actual witnesses of her life in Rome are worthy of attention; and Guicciardini, her bitterest enemy, is not of this number. The verdicts of all later writers, however, have been based upon his opinion of Lucrezia, because of his fame as a statesman and historian. He himself made up his estimate from current gossip or from the satires of Pontanus and Sannazzaro—two poets who lived in Naples and not in Rome. Their epigrams merely show that they were inspired by a deep-seated hatred of Alexander and Cesare, who had wrought the overthrow of the Aragonese dynasty, and further with what crimes men were to credit evil-doers”.

William Roscoe was the first to question Guicciardini’s conclusions, offering in her favour the evidence of her later life at

Ferrara, which was exemplary, according to Roscoe, in its domesticity. Roscoe's version was amplified by William Gilbert (father of W. S. Gilbert, of Gilbert and Sullivan) in *Lucrezia Borgia* (2 vols., London, 1869), who cites Lucrezia's own letters as [surely a rather dubious] testimony to the faithfulness with which she carried out her domestic duties. Gilbert acknowledges the unlikelihood of her residing for some twenty years in the foul atmosphere of her father's court in Rome without having been contaminated by it at least in some degree, but asserts that her detractors are too vocal in their denunciation.

Gregorovius absolves Lucrezia from the charge of complicity in the murder of her second husband, Alfonso di Bisceglia, and discredits the accusations of incest, citing the divorced Giovanni Sforza's motive to retaliate on the family which had discarded and disinherited him. Let Gregorovius be heard, too, on the fallacy of any sweeping, over-confident judgment of such historical figures as Lucrezia: "Men of past ages are merely problems which we endeavour to solve. If we err in our conception of our contemporaries, how much more likely are we to be wrong when we endeavour to analyse men whose very forms are shadowy. All the circumstances of their personal life, of their nature, the times, and their environment—of which they were the product—all the secrets of their being exist only as disconnected fragments from which we are forced to frame our conception of their characters. History is merely a world-judgment based upon the law of causality".

Incidentally, it is also a fallacy that 'Borgia' is the original name of the family: it was Spanish, and Borgia is merely the closest that the Italians could come to the pronunciation of Borja, their true name.

MOVE YOUR BOWELS TWICE A DAY!

The romantic novelist Barbara Cartland, in her pseudo-scientific book *The youth secret* (London, 1968), advises against constipation, to which she attributes 'every sort of disease that it's possible to have'. In fact, J. A. C. Brown assures us all (*Pears medical encyclopaedia*, London, 1967) that constipation "is a disease largely invented by the individual himself" and "is complained of by those who take far too much care of themselves".

Ms Cartland recommends inducing a bowel movement

every twelve hours for the sake of health and inner cleanliness, but August Thomen, in his amusing swipe at the health-crank *Doctors don't believe it! why should you?* (New York, 1935), indicates that man may be safer from autointoxication from intestinal poisons when he is constipated, since bacteria would tend not to increase under such conditions, but would do so rapidly under the more moist conditions in the intestinal contents introduced by laxatives. This is also nonsense: there is certainly discomfort during prolonged bouts of constipation, but this is due to mechanical pressure (fullness in the large intestine) and not to any effect of poison.

Let Professor Samson Wright have the last word. In his *Applied physiology* (11th ed., 1965), he writes: "The symptoms of constipation are largely due to distension and mechanical irritation of the rectum", and the average period of constipation is said to be two days, but Professor Wright states from his experience that quite a number of people have bowel movements only about five or six times a year, yet their general health remains good, and certainly better than those sad cases following Ms Cartland's advice who end up with mucous colitis caused by purgatives.

BRITAIN IS RICH IN NATIVE FRUITS AND VEGETABLES

As A. H. Halsey, Professor of Social and Administrative Studies at Oxford University, has said, horticulture as both art and science is a matter of importation into Britain. Six thousand years ago an early form of wheat was introduced into Britain, and the only native English fruits are almost inedible when raw: they include the sloe, elderberry, damson and crab-apple. Fuchsias come from Chile, chrysanthemums from India and roses from China. An English housewife is likely to bring back from the shops French beans, Spanish onions, Jaffa oranges, Caribbean bananas, and New Zealand lamb.

Source: A. H. Halsey, 'What books I please', broadcast on B.B.C. Radio 3, 27 December 1979.

BRITANNIA RULES THE WAVES

No more famous sound echoes around the Royal Albert Hall

in London every year during the season of the Henry Wood Promenade Concerts than the full-blooded roars “Britannia rules the waves” and “Britons never shall be slaves”.

But the eighteenth-century poet James Thomson, in *Alfred: a masque* (Act II, Scene 5), wrote no such thing. “When Britain first, at Heaven’s command, / Arose from out the azure main”, the guardian angels first of all *exhorted*:

“Rule, Britannia, rule the waves;”
and then *predicted*:

“Britons never will be slaves”.

THE EFFECTIVENESS OF THE BRITISH PREMONITIONS BUREAU

Soon after the Aberfan disaster in Wales, in 1967, so many reports were published of people claiming to have received a premonition of the disaster that a British Premonitions Bureau was set up to investigate a variety of premonitions submitted by people in all walks of life. Up to 1974, the Bureau had received over 3,000 reports, so that there is now overwhelming evidence to be judged in the case for and against the faculty of ‘premonition’ or precognitive experience. The cases were properly documented, and results were systematically analysed in terms of frequency, type, and degree of accuracy.

Dr John Beloff, President of the Society of Psychical Research, wrote as follows of the findings in *Journal of the Society for Psychical Research*, vol. 48, no. 764, June 1975 (p. 100): “The yield has not been impressive. Even the best hits, and these are mostly contributed by a small number of individuals, are hardly staggering in their accuracy. Moreover, the original hope of the Bureau that it might come to act as an early warning system for future natural disasters like that of Aberfan has not yet been realized”.

See also: Andrew MacKenzie, *The riddle of the future: a modern study of precognition* (London, 1974).



“La causa más universal de los errores comunes es que los más de los hombres no pasan con el discurso más allá de la superficie de las cosas”. (The most frequent cause of common errors is the fact that most people never delve beneath superficialities) — FRAY BENITO JERONIMO FEIJOO.

THE CAESAREAN SECTION WAS FIRST PERFORMED AT THE BIRTH OF JULIUS CAESAR

The Caesarean section, in earlier times, involved saving the life of a newborn child at the expense of its mother by removing the child through a cut made in the front of the abdomen. The operation, known as Caesarean section, is popularly believed to have been first performed on Julia, mother of Julius Caesar, but the operation is not recorded as early as 100 B.C., and Julia lived many years after the birth of the future Dictator.

The name ‘Caesarean section’ probably derives from the so-called ‘Lex Regia’ or ‘Lex Caesarea’, which decreed that the child should be removed from every woman who died when far advanced in pregnancy, even in cases where the child stood no chance of survival, so that mother and child might be buried separately. Such a case is obviously inapplicable to Julia and her son.

Incidentally, Caesar was never Roman Emperor (there was no ‘Empire’ as such until after his time), but first Consul (five times) and eventually Dictator.

Sources include: Howard W. Haggard, *Devils, drugs and doctors* (London, 1929, pp. 40-1).

CALIFORNIA IS AN ISLAND

California has always been a fabulous place: even its name is derived from a piece of fantastic fiction by Garci Rodríguez or

Gutiérrez Ordóñez de Montalván, *Las sergas de Esplandián* (Madrid, 1510), which is the fifth volume of the adventures of the much more celebrated *Amadís de Gaula* (first extant edition Saragossa, 1508, in the British Library). The romance tells of the son of Amadís (Esplandián) and his adventures among the black Amazons ruling an island called 'California', very close to part of the Terrestrial Paradise. The significance of the name California from the 1530s was the southern part of Lower California (then still believed to be an island), and there is the evidence of one cartographer as late as 1740 that he knew mariners who had sailed round the whole Californian island coastline! The fallacy was commonly believed by Juan Rodríguez Cabrillo (1542-3) and his successor Bartolomé Ferrelo, who explored virtually the entire coast to a point just north of the present boundary; by Sir Francis Drake (1579), who named the area New Albion; by captains of the Spanish galleons en route from the Philippines to Acapulco; and by Sebastián Vizcaíno (1602-3), who discovered the Bay of Monterey.

THE CALIFORNIAN COAST SLIPPED INTO THE OCEAN IN APRIL 1969

Thousands of people deserted California in April 1969 after hundreds alleged having received prophecies through ouija boards, dreams and spiritualistic séances united to the effect that the West Coast of the U.S.A. was about to slip forthwith, with loss of life and property, into the Pacific Ocean.

When the predicted event did not happen, where were the shamefaced prophets? Will they stop attending to false mediums, and to their débris of their dreams? Will they, can they possibly, desert their homes and their reason when the panic strikes again?

Why not? For the churches of California continue to bewitch their gullible congregations, as Nathanael West wrote of his hero and *alter ego*, Tod Hackett, in his novel *The day of the locust* (1939): "He spent his nights at the different Hollywood churches, drawing the worshippers. He visited the "Church of Christ, Physical" where holiness was attained through the constant use of chestweights and spring grips; the "Church Invisible" where fortunes were told and the dead made to find lost objects; the "Tabernacle of the Third Coming" where a woman in male clothing preached the

“Crusade Against Salt”; and the “Temple Moderne” under whose glass and chromium roof “Brain-Breathing, the Secret of the Aztecs” was taught.

As he watched these people writhe on the hard seats of their churches, he thought of how well Alessandro Magnasco would dramatize the contrast between their drained-out, feeble bodies and their wild, disordered minds. He would not satirize them as Hogarth or Daumier might, nor would he pity them. He would paint their fury with respect, appreciating its awful, anarchic power and aware that they had it in them to destroy civilization.

One Friday night in the “Tabernacle of the Third Coming”, a man near Tod stood up to speak. Although his name most likely was Thompson or Johnson and his home town Sioux City, he had the same countersunk eyes, like the heads of burnished spikes, that a monk by Magnasco might have. He was probably just in from one of the colonies in the desert near Soboba Hot Springs where he had been conning over his soul on a diet of raw fruit and nuts. He was very angry. The message he had brought to the city was one that an illiterate anchorite might have given decadent Rome. It was a crazy jumble of dietary rules, economics, and Biblical threats. He claimed to have seen the Tiger of Wrath stalking the walls of the citadel and the Jackal of Lust skulking in the shrubbery, and he connected these omens with “thirty dollars every Thursday” and “meat eating”.

CALORIC

The most important fallacy concerning heat in the 18th century centred on the idea that heat was a material substance capable of being poured or otherwise transferred from one substance to another. Caloric (from the Latin *calor*, ‘heat’) was supposed to pass from burning paper into the flame. A boiling saucepan, for example, transferred caloric from the wood or charcoal below it into the flame, then through the surface of the saucepan into the water. When the water received the caloric, it was converted into steam.

The fallacy was exploded for the first time by an American, Benjamin Thomson, who fled his country during the Civil War and worked as a physicist in charge of the arsenal of the Elector of Bavaria. In 1798, while supervising the boring of brass cannon, he noted that a great deal of heat was being

produced — in excess of that which could be expected by the caloric theory. Enough heat was in fact being generated to bring eighteen pounds of water to boiling point in under three hours. He deduced that heat must be a *vibration* generated and intensified by the friction (and communicated by the motion) of the borer against the cannon, and not a material substance.

Though clearly fallacious, the caloric theory remained popular and was taught in schools all over Europe for half a century after it was proved wrong. Heat has long been known as a form of energy, like electricity and magnetism.

THE CANDLESTICK OF THE ANDES

In 1973, Robert Charroux's *Livre des mondes oubliés* appeared in English as *Lost worlds: scientific secrets of the ancients*. If they had been secrets, presumably M. Charroux could not have discovered them. Sir Arthur Conan Doyle's adventure story *The lost world* was not less imaginative than the strange stories told by M. Charroux. Let us take for instance his account of the mysterious 'Candlestick of the Andes', which occupies pages 6 to 19 of his book. "The Paracas peninsula", he writes in the hushed awe of impending discovery typical of such pseudo-scientific compilations, "is a hundred and ninety miles south of Lima, Peru. It is here that the enigmatic Candlestick of the Andes is dug into the side of a small, purple, crescent-shaped mountain. The soil of the mountainside is sandy, with a thin surface layer of purple gravel over a thick layer of fine, compact yellow sand without a trace of impurity . . . It is incredible but true, in the sands of Paracas, traces that would be effaced in an hour anywhere else, remain intact *for hundreds and probably even thousands of years*". [Charroux's italics].

These palpitating claims are made against the backdrop of a photograph of sand dunes. Charroux admits, on page xvii of the English edition of his book, that 'The Candlestick of the Andes' is not carved in rock at all, but dug in sand. A whole marvellous edifice crumbles because an enthusiastic writer has no understanding of geology. See also THE ROUND STONES OF GUATEMALA.

CAT FALLACIES

In the U.S.A., Spain, and some other countries, a white cat is

considered lucky, and a black cat unlucky. In Britain, the opposite fallacy prevails. Neither has of course a grain of truth in it. Both go back to the time when 'witches' were assumed to have 'familiars' and most old ladies living alone kept a cat for company, so the 'familiar' must have been a cat. A black cat's green eyes, seen apparently 'disembodied' in the dark, have been a source of fear to the ignorant and nervous.

Charles Darwin, no less, wrote in *The descent of man* that "the tortoise-shell colour, which is confined to female cats, is quite distinct at birth". But Kit Wilson's *Cat encyclopedia* (Kingswood, Surrey, 1951) disagrees. "There have been statements that sexual difference of colouring has been found in the cat tribe. This is a fallacy, and probably arose over the question of the red male being the counterpart of the tortoiseshell female. This theory has been exploded very successfully; there are as many red females on the show bench today as males, also some tortoiseshell males have made their appearance".

Cats can see in the dark, but *only* if the dark is not complete. In pitch blackness, the cat is as helpless as you or I.

It is also a fallacy that 'pedigree' cats are of outstanding quality. In *Cats* (Harmondsworth, 1957), Brian Vesey-Fitzgerald observes: "It should be pointed out that *every* cat, that every living creature, has a pedigree. It may not always be known, and it may be very disreputable, but it is a pedigree. What is meant by the term 'pedigree cat' is a cat whose ancestry on both sides is known for some generations back, a cat with the unadulterated blood of a particular breed. This does not necessarily mean that it is a cat of outstanding quality. No breeder can say what qualities are going to appear in the kittens of any particular mating".

The cat's sense of smell is commonly thought to be poor. "Indeed", writes Vesey-Fitzgerald, "you do sometimes meet people who maintain that the cat has no sense of smell. In fact, the cat has an exceptionally acute and delicate sense of smell — much more delicate than has the dog".

The cat's tail is usually regarded as a balancing organ. But Manx cats, which are tailless, are just as good at balancing as tailed cats.

THE CATACLYSMS ARE COMING!

According to *The age of cataclysm* (New York, 1974) by

Alfred Webre and Phillip Liss, the Earth is entering a period of huge natural catastrophes, including floods, earthquakes, and volcanic eruptions of all kinds, leading to famine and widespread depopulation.

Not to worry. Bruce H. Tiffney of Harvard University, reviewing their outburst in the New York *Library Journal* in August 1974, concluded that "some of the geological facts are wrong, the sources for much of the material are not scientifically acceptable, and much geological material is completely misinterpreted. Most disturbingly, the authors display a complete lack of comprehension of the very basic philosophy of geology".

Giordano Bruno, a martyr to scientific freedom in 1600, sardonically stated that ignorance is the "most delightful science in the world, for it is acquired without pain and keeps the mind from melancholy".

GLANVILL ON THE CAUSES OF ERROR

In *The vanity of dogmatizing* (London, 1661; reprinted New York, 1931), Joseph Glanvill offered a list of the causes of human error, beginning with the Fall of Man. Others include the difficulty of attaining truth, the deception of our senses and our imagination, the inclination to jump to conclusions unwarranted by evidence, and the influence of love, custom, interest, egotism, and reverence for antiquity and authority, on our understanding and judgment.

Glanvill was clearly influenced by Francis Bacon's *Idola* (q.v., volume 1), *De causis errorum* by Edward, Lord Herbert of Cherbury, and Sir Thomas Browne's important *Pseudodoxia epidemica*.

EDGAR CAYCE AND MEDICAL DIAGNOSIS BY REMOTE CONTROL

A small library and a great cult have formed around the person and alleged powers of Edgar Cayce, who was born in Hopkinsville, Kentucky, in 1877, and died in 1945. The Association for Research and Enlightenment Inc. (ARE) was founded in 1932 at Virginia Beach, Virginia 23451, U.S.A. to preserve, study and publish the so-called 'readings' of Edgar Cayce. ARE is now run by Cayce's sons. Hugh Lynn Cayce writes in Doris Agee's *Edgar Cayce on E.S.P.* (New York,

1969): “when Edgar Cayce died . . . , he left well over 14,000 documented stenographic records of the telepathic-clairvoyant statements he had given for more than six thousand different people over a period of forty-three years. These documents are referred to as ‘readings’.”

The readings are considered important by Hugh Lynn Cayce, because they “constitute one of the largest and most impressive records of psychic perception ever to emanate from a single individual”.

However, no qualified doctor (and Cayce had no orthodox medical qualifications of any kind — indeed he left school after seventh grade) would agree that it is reputable to diagnose an illness or disease without a careful physical examination coupled with an interview with the patient concerning signs and symptoms.

Cayce’s method of diagnosis was to enter a (probably genuine) self-hypnotic trance, lying on his back facing south (or later north). In trance, whether the patient was absent or present, Cayce would give, in Martin Gardner’s words “a rambling diagnosis of the cause of the disorder, in terms borrowed largely from osteopathy and homeopathy. Most of Cayce’s early trances were given with the aid of an osteopath who asked him questions while he was asleep, and helped later in explaining the reading to the patient”.

The origin of Cayce’s readings can, therefore, be ascribed to associations with osteopaths and fundamentalist religion which favoured an unenquiring, uncritical approach. In *There is a river* (1943), the Roman Catholic writer Thomas Sugrue suggested that, if a patient ‘doubted’ Cayce’s ability to diagnose his ailment correctly, the diagnosis would not be good. The gullible are thereby satisfied and the sceptical are silenced. But J. B. Rhine of Duke University, a believer in clairvoyance, was critical of Cayce when the reading for Rhine’s daughter failed to fit the facts, and there is no doubt that there was never any real medical value in a Cayce reading other than inspired guesswork. The remedies included spinal massage, herbal concoctions, special diets, tonics, electrical treatments and such bizarre notions as ‘oil of smoke’ for a leg sore and almonds for cancer.

Cayce was eventually persuaded by supporters that he enjoyed occult powers, though he was a kindly man by all accounts, with a charming smile, and a willingness to listen to

those interested in theosophy, pyramidology, and Atlantis. He believed, or at any rate said he believed, that Atlantis would rise again in 1968–9, but the failure of yet another prediction has not daunted the many study groups formed specifically to consider Cayce's readings. Cayce taught that Arcturus is the next abode of souls leaving the solar system and, in his *Auras* (1945), stated that throughout his life he had been able to diagnose a patient's health and character from the coloured aura which he could see surrounding everybody's head and shoulders.

There is no sense in which Cayce, honestly trying to help people who for one reason or another repudiated orthodox medical diagnosis, deliberately deceived anyone, at least as far as is known at present. Certainly his 'cures' were demonstrably ineffective in many cases, and nonsensical in others, but there is a residue of readings which, by a process of luck or experience or a combination of both, actually helped the patient.

The danger is that the gullible will be tempted to infer that, because some treatments were successful, so the *methods* must be successful in other situations. This is not the case, but there has arisen a vast new pseudo-medical field called 'paradiagnostics', which claims to make use of clairvoyance in which there is no physical contact with the patient.

It was after reading Joseph Millard's *Edgar Cayce: mystery man of miracles* (Greenwich, Conn., 1961), that Dr Shafica Karagulla, a Christian Turk, decided that Cayce was a genuine clairvoyant and started to explore for others with his 'powers'. Dr Karagulla, who is president and director of the Higher Sense Perception Research Foundation, 8668½ Wilshire Boulevard, Beverly Hills, has worked largely with Dora van Gelder, and has described her work in *Breakthrough to creativity: your higher sense perception* (Santa Monica, 1967). In *Psychic* (vol. IV, no. 6, July-August 1973), Dr Karagulla indicated her belief in 'energy sappers', or people who can steal energy from others. She states that energy sappers are self-centred, their flow of energy being inward, not outward.

Sources include: Martin Gardner, *Fads and fallacies in the name of science* (New York, 1957, pp. 216–9).

THE YEAR ENDING 31 DECEMBER 2000 IS THE FIRST YEAR OF A CENTURY

The year beginning 1 January 2000 and ending on 31 December 2000 is the last year of the 20th century, not the first year of the 21st. The reason is that the Christian calendar dates from 1 January of the year 1, not the year 0.

THE NECESSITY OF CHANCE

In *Chance and necessity* (London, 1972), Jacques Monod of the Institut Pasteur commits the 'Only One' or 'Nothing But' fallacy observed in the case of **TEILHARD DE CHARDIN** (q.v.)

Strange to say, however, where Teilhard's evolutionary theories admit *only* design, Monod's beliefs admit *only* chance. "Chance alone is at the source of every innovation, of all creation in the biosphere . . . This central concept of modern biology is no longer one among other possible or even conceivable hypotheses. It is today", writes Professor Monod with absolute finality, "the *sole* conceivable hypothesis, the only one that squares with observed and tested fact. And nothing warrants the supposition — or the hope — that on this score our position is ever likely to be revised".

Now, it is not possible to accept both Monod's position and Teilhard's. The remaining alternatives are (a) that one of them is wholly correct and the other wholly incorrect, which is highly unlikely to be the case, since each case is so thoroughly argued; and (b) that both of them are wrong, which is highly likely, since each argues that his position is wholly correct and admits of no reconsideration. In scientific thought, dogmas as opposed to proofs are quite frequently found to be wanting. (Sir Isaac Newton persuaded millions of the absolute reality of space and time, which cannot be wholly correct if Einstein's theories of relativity are wholly correct. Again it seems likely that while Newton was in grave error, Einstein appears not to have been wholly correct).

ROBERT CHARROUX AND THE MYSTERIOUS UNKNOWN

For those with an unconquerable aversion to historical and archaeological facts, Robert Charroux's books will be required reading. *The mysterious unknown* (London, 1972), for

example, comprises twenty-two chapters teetering on the brink between the obvious on the one hand (the well-known Moebius Strip is adduced as a mystery!) and baseless speculation on the other. If you don't believe me (and please don't!), here are the chapter-titles and a specimen example from each: Unsolved enigmas (St. Brendan's Isle), Fantastic science (the Moebius Strip), Ancient sciences (a plant to make granite malleable), Memory chromosomes (Dolmens, cathedrals and rugby matches on other planets), Tradition and the mystery of the megaliths (Carnac and the Trojan War), Celtic civilization (Were the Incas Celts?), Vanished civilization (Denis Saurat's giants), Atlantis (The Hebrews, were they Bretons?), Other sites for Atlantis (The Caspian, Heligoland, the Mediterranean, Mongolia), Hyperborea and Egypt (Was Apollo an Extra-Terrestrial Being?), Barbarian civilizations (The Celts of San Agustín), The Mystery of the Pyramids (The Curse of the Dead), The Mystery of Phantasms (How to see flying saucers), Words, Apes and Dolphins (The Yeti, is it Hanuman?), The Water of Life (The power of rain water), Ancient mysteries (The mystery of Delos), The Mystery of Agartha and of Shamballah (The luminous race), The Universe (Who created it?), Oddments and oddities (Napoleon, Breton or Charentais?), Prediction and the end of the world (Electronic astrology), Sorcery (Never eat beans), and Extra-terrestrials and the journey to Bâavi (Life on Mars).

Ask if this were not enough, M. Charroux's revelations in another book, *Masters of the world*, include a fallacious proof that a universal deluge (with waves of 6,000 feet!) did indeed occur; the allegedly 'secret' powers of jade, which are presumably no longer secrets and are certainly not powers; and an erroneous exposition of the inscriptions on Tibetan stone discs, which the author claims prove that spacecraft visited Earth in the remote past.

In *100,000 years of man's unknown history* (New York, 1971), M. Charroux asks us to believe that superior ancestors brought on a worldwide nuclear disaster, and that the tragically-impaired survivors gradually climbed *back* up the scale of evolution to restructure the human race! It is not clear as to how our ancestors came to a state of knowledge analogous to our own as regards atomic physics in the absence of any proof, neither is there any indication in the fossil record to support these wild theories.

Ridicule of his ideas did nothing whatsoever to daunt M. Charroux, however, whose *Legacy of the gods* (New York, 1974) merely amplifies his previous theories. He has answered the following 'enigmas' to his own satisfaction by using the atomic explosion theory:

1. Probability of a civilization on a fracture line naturally favourably to development.
2. Likelihood of an atomic cataclysm.
3. Valleys of death and vitrified cities.
4. A natural cataclysm responsible for the Earth's inclination of 23° 27'.
5. Exodus of the ancient Mexicans [according to one of the Charroux theories, one nuclear explosion occurred near present-day Las Vegas, and the other in the Gobi Desert].
6. Reasons for the disappearance of the horse from the land where it originated.
7. Taboo on North America and men's refusal to live there.
8. Civilization in the United States before Sumer.
9. Stories of a land of 'white ancestors' and quests for the Happy Isles, Brazil Island, Hyperborea, and Thule.
10. Light came from the west.

If it is not a colossal hoax, *Legacy of the gods* must rank as one of the strangest compendia of unintentional mistakes ever crammed between the covers of one book, yet it has sold tens of thousands of copies. Let us look at some of the ideas scattered forth without benefit of illustrations, index, source material, or reference to previous theorists (apart from a complete acceptance of Velikovsky!). There was a Venusian expedition to Armenia. The Russian politician Molotov benefited from secret powers bestowed on him by the leader of the lamas of Central Asia. The Master of the World is alive and well in the People's Republic of Mongolia: his name is Jebtsung (or, if you believe the back cover of the British paperback, Jebstung). "In the vast area now studded with such cities as Las Vegas, Los Angeles, Salt Lake City, Kansas City, Saint Louis, Memphis, Little Rock, Dallas, New Orleans, and Houston, there were once the proud cities of superior ancestors who had achieved space travel, cybernetics, television, and atomic fission". Prehistoric men dressed in hats, jackets, trousers, and shoes, and lived in a kind of golden age whose resources were numerous, inexhaustible, and easy to exploit. [Why did they not then use

some of our fossil fuel supplies?] There was an atomic war between Atlantis and Mu, in which both were destroyed. In 1962, a Brazilian called Rivelino de Manfra da Silva was kidnapped, and 17 chickens, 6 pigs and two cows were stolen "by the crew of a craft presumed to be extraterrestrial".

Some of the above is too comic for comment; much of it shows an ignorance of geology, astronomy, and history which is breathtaking; most of it is material for nightmares.

M. Charroux makes the world infinitely more terrifying to immature minds than it really is: we must trust parents, teachers, and librarians to offset such nonsense with excellent popular history, such as the *History of mankind* issued under the auspices of Unesco, beginning with *Prehistory and the beginnings of civilization* by Jacquetta Hawkes and Sir Leonard Woolley (London, 1963); and with excellent popular science, such as Isaac Asimov's *Guide to science* (2 vols., New York, 1972). The extra knowledge gained is worth all the extra effort involved.

FALLACIES IN CHEMISTRY

As Charles A. Browne has explained, "the history of chemistry is largely an account of the mistakes that man has made in his effort to arrive at a satisfactory explanation of the constitution, properties, and transformations of matter . . . The chemical texts of a hundred years ago are now rejected because of certain errors of statement. A century hence the chemistry books of our time will meet with a similar rejection".

When, then, did chemistry begin? Was it with the applied chemistry of prehistoric man, who learnt to tan hides, to dye wool, and to smelt ores? Was it with the first unified principle or law of the Ionic nature philosophers, who reduced all chemical operations to the action or interaction of the 'four elementary principles': earth, air, water and fire? Was it with the first experiments of the Chinese (not later than the 7th century), the Indians (not later than the 8th century), the Arabs, or the later Europeans? Was it with Boyle in the seventeenth century, or with Lavoisier in the eighteenth?

All these answers are relatively true or false, depending upon one's point of view. What is certain is that progress was steadily made (by Francis Bacon, van Helmont and others) when experiments began to prove old ideas wrong, and when

subsequent experiments with better equipment and better theories displaced the old.

Thales (640–546 B.C.) sought to reduce the world around him to a single principle, and believed that this principle was water. Jan Baptista van Helmont (1577–1644), one of the founders of modern experimental chemistry, demonstrated to his own satisfaction that Thales was correct in this assumption! The Ionic philosopher Anaximenes suggested that the original element from which the universe was created was air. Heraclitus stated it to be fire. Empedocles (c. 455–395) was more influential than any other early Greek scientist in claiming that there are four elements: air, fire, water and earth. The Empedoclean world view continued to find adherents in England as late as the eighteenth century, and some occultists even now have been unable to rid themselves of this acutely over-simplified account of the universe. The later scientist Democritus (c. 400–357 B.C.) is the father of modern chemistry on account of his atomic theory, but his idea that there is no design or purpose in the universe was repugnant to his contemporaries, to later cultures dominated by religion, and to occultists and Teilhard supporters today. Democritus argued, against Aristotle, that the same substance may exist in different states. The Aristotelean world view was more sympathetic to the prejudices of later thinkers than was the doctrine of Democritus: it was against tremendous opposition that Bacon, Galileo, Gassendi, Boyle and Newton propagated the atomic conception of Democritus, with the ideas it entailed.

Fallacious *a priori* reasoning led to the gigantic error of alchemy, and to such mistakes as those of Philo of Byzantium and Hero of Alexandria (both of the second century B.C.) on the question of combustion (q.v.). Early scientists tended to accept a false system of enquiry, and then to devise experiments to illustrate the truth of such preconceptions rather than to test the validity of the preconceptions. Charles A. Browne summarizes the chemical accomplishments of the Greeks by saying that “their work was distinguished on the one hand by many brilliant conceptions, some of which had a great influence on the future history of the science, and that it was characterized on the other by a great lack of experimental ability, such as was needed for subjecting their speculations to practical tests. They failed to make proper use of such experi-

mental knowledge as they already possessed, for had they applied the densimetric method of Archimedes (287–212 B.C.) to testing the gold and silver that they thought to obtain by the transmutation of base metals, they would have demonstrated the fallacy of alchemy at the outset and thus saved the world from one of the greatest illusions of the human mind”.

Paracelsus (1493–1541) asserted that “the object of chemistry is not to make gold but to prepare medicines”. But he was still a firm believer in transmutation, citing the apparent conversion of iron into copper by placing a nail in a solution of blue vitriol. Paracelsus also gave much wider currency to the fallacy of the ‘three principles’. Some alchemists, including the Arab Abu Musa Ja’afar as-Sufi, known as al-Jabr (and more frequently in the West as ‘Geber’), propagated the fallacy that all metals consist of sulphur and mercury. Christian alchemists were not keen on dualism, however, and in order to make a trinity, added a third ‘principle’, which was salt. The theory was that the skill of transmutation lay in the theory and practice of combining more or fewer of the three ingredients. The fact that alchemists could not actually *find* the hypothetical components in laboratory tests was explained away by quoting Aristotle’s distinction between actual and potential properties.

It was left to Robert Boyle, in his *Sceptical Chymist* (London, 1661, and available in an Everyman edition), to demolish the alchemical doctrines of the four elements, and the iatrochemical doctrines of the three principles.

For the fallacy of phlogiston, see volume 1. For the vitalistic fallacy, see **VITALISM** in this volume.

Sources include: Charles A. Browne, ‘Error in chemistry’ in Joseph Jastrow (ed.), *The story of human error* (New York, 1936); and J. R. Partington, *History of chemistry* (4 vols., London, 1961–70).

CHINA HAS HAD NO SCIENCE

In an essay entitled ‘Why China has no science’, the distinguished Chinese philosopher Feng Yu-Lan wrote: “I shall venture to draw the conclusion that China has had no science, because to her own standard of values she has not needed

any . . . The Chinese philosophers had no need of scientific certainty because it was themselves that they wished to know; so in the same way they had no need of the power of science, because it was themselves that they wished to conquer. To them, the content of wisdom was not intellectual knowledge, and its function was not to increase external goods”.

This is absolutely wrong. Dr Joseph Needham, whose multi-volume *Science and civilization in China* is an ornament of Western sinology and refutes Feng Yu-Lan’s observation by its very size, observes that “between the fifth century B.C. and the fifteenth century A.D. Chinese bureaucratic feudalism was much more effective in the useful application of natural knowledge than the slave-owning classical cultures or the serf-based military aristocratic feudal system of Europe. The standard of life was often higher in China; it is well known that Marco Polo thought Hangchow a paradise. If there was on the whole less theory there was certainly more practice . . . The bureaucratic ethos seems to have helped applied science in ways. One could instance the use of the Han seismograph to signalize and locate calamities before news of them reached the capital, the erection of a network of rain-gauge and snow-gauge stations in the Sung, or the extraordinary expeditions undertaken in the Tang to measure a meridian arc from Indo-China to Mongolia over 1,500 miles long, and to map the stars from Java to within 20° of the south celestial pole. The *li* was keyed to a celestial-terrestrial standard a hundred years before the kilometre. Let us not despise then the mandarins of the celestial empire”.

Sources include: Feng Yu-Lan, ‘Why China has no science’, in *Chung-kuo chê-hsüeh shih pu* [Contributions to the history of Chinese philosophy] (Shanghai, 1936); and Joseph Needham, *The grand titration* (London, 1969).

CHLOROFORM IS OBJECTIONABLE ON RELIGIOUS GROUNDS

The *Dictionary of National Biography* is only one of many sources which refers to the struggles endured by those scientists and doctors who discovered chloroform (Soubeyran, 1831) and used it as an anaesthetic (Holmes, 1847; James Young Simpson, later in 1847): “Its use was strongly denounced as dangerous to health, morals and religion, and

Simpson had to battle stubbornly against prejudice, but he ultimately won the victory, and chloroform as an anaesthetic came into universal use". Certain doctors in Ulster cited against chloroform Gen. iii. 16; Simpson retaliated by citing the precedent of God, who "followed out this very principle of practice in the first surgical operation ever performed on man which is contained in Gen. ii. 21, when He 'caused a deep sleep to fall' on Adam before Eve was brought into the world".

Thus is absurdity answered by absurdity. The fallacy that Simpson introduced chloroform is perpetuated in Westminster Abbey, on the marble tablet to his memory.

CHRISTIAN SCIENCE AND THE ILLUSION OF DISEASE

Professor Arasaratnam of Sri Lanka asks why Mary Baker Eddy (1821–1910) was omitted from the first volume of the *Dictionary*, since her teachings in *Science and health* (1875) are based on the fallacy that disease is an illusion. I apologise to readers who were disappointed: of course they are right.

The founder of Christian Science was a sickly child who had little formal education and was easily impressed by an appeal to her faith. She was strongly influenced by the faith healer Phineas Parkhurst Quimby who coined the term 'Christian Science' but used it for his personal ends and allowed his disciple to organise his ideas into an imprecisely pseudo-scientific religious system based on the reliance on prayer for the curing of 'disease', in the belief that physical disease is an illusion, and as such can be cured by the power of prayer. These are Mrs Eddy's words, taken from the movement's sacred text, *Science and health* (p. 468): "There is no life, truth, intelligence, nor substance in matter. All is infinite Mind and its infinite manifestation, for God is All-in-all. Spirit is immortal Truth; matter is mortal error. Spirit is the real and eternal; matter is the unreal and temporal. Spirit is God, and man is His image and likeness. Therefore, man is not material; he is spiritual", No surgeon who has removed a cancerous growth would agree that man is not material, and that the growth could be removed by the power of prayer.

Again, in her *Retrospection and introspection* (p. 38): "I gained the scientific certainty that all causation was Mind, and every effect a mental phenomenon". But though the pain I feel on breaking a leg may be a mental phenomenon, the

break in the leg is a physical phenomenon. The distaste for all or most drugs shown by Christian Scientists is a matter for their own personal discretion, but when such prejudices put the lives of their family members at risk, it is time to call a halt, and to accept with gratitude the advances of modern surgery and medicine.

Sources include: Woodbridge Riley and others, *The faith, the falsity and the failure of Christian Science* (London, 1926), an impressive series of testimonies against Christian Science by medical and psychological specialists; and Kenneth Scott Latourette, *Christianity in a revolutionary age* (vol. 3, London, 1961).

PALEY AND THE EVIDENCES OF CHRISTIANITY

William Paley (1743–1805) became a tutor at Christ's College, Cambridge, in 1768, and lectured there on moral philosophy until he married and retired to a northern rectory to write up his lectures for book publication: *Principles of moral and political philosophy* (1785).

But he achieved fame only with *A view of the evidences of Christianity* (3 vols., London, 1794), which became the basic treatise on divinity for more than a century. It sums up the 18th-century theology of empiricism, attempting to prove the truth of Christianity not by simple faith, but by reference to the physical world. This movement culminated in the Bridgewater Treatises, just before the middle of the nineteenth century. Pursuant to the will of the eighth Earl of Bridgewater, the President of the Royal Society selected eight persons, each to receive £1000 for writing and publishing a work on some aspect of "the power, wisdom, and goodness of God, as manifested in the creation". For that kind of money there were willing writers: Kirby on *The habits and instincts of animals with reference to natural theology*; and Roget on *Animal and vegetable physiology with reference to natural theology*, to name but two.

But Paley remained the dominant figure in this school, which had so many proponents all over Europe that Goethe was moved to parody its central fallacy in a famous verse which praised the creator's forethought in providing the cork tree to furnish stoppers for wine bottles. Paley set out to prove "the necessity, in each particular case, of an intelligent designing mind for the contriving and determining of the forms

which organized bodies bear” and for this purpose was compelled to isolate the divine origin of Christianity from the history of mankind. Paley rejected the theory of an adaptation by an organism to its circumstances as a result of use, and it is largely to Paley’s supporters that we owe the widespread furore raised against Charles Darwin and his largely correct theories of natural selection.

Darwin himself paid tribute to the progress represented by Paley’s approach (more empirical than his predecessors), and stressed the stimulating effect of mistaken *theories* as opposed to the sterilizing effect of mistaken *observations*. Mistaken observations, so common before Paley, lead men astray. Mistaken theories, such as those of Paley and his school, can suggest true theories. The natural theologians had no idea or understanding of evolutionary possibilities or evidences. Darwin proved that adaptation to circumstances required no design or designer, but could be explained by evolution through the process of natural selection.

ALL CHURCHES HAVE THEIR ALTAR IN THE EAST END

Many West European churches are built in relation to the rising sun, hence the term ‘orientation’, with the altar at the east end. The main façade is consequently often spoken of as the West Front.

However, there is no necessity for this, and hundreds of churches have their main altar at the west end, including St. Peter’s in Vatican City.

CIGAR FALLACIES

Sydney Brooks, while visiting the cigar factories in Cuba early in the 20th century, discussed erroneous beliefs held by laymen on the subject of cigars.

“The average smoker believes that a dark wrapper means a strong cigar and a light wrapper a mild one; and he is absolutely wrong. There is no connection whatever between colour and strength. Squeezing cigars and smelling them are equally fallacious as tests of quality. So, too, is the colour and firmness of the ash; the notion that the whiter the ash and the longer it stays on, the better the cigar, is altogether erroneous. The best Havanas burn with a clear steel-grey ash, and its

duration and length are determined mainly by the size of the pieces used in the fillers.

Then, again, the men in Havana, heedless of the club reputations they are shattering, insist that a spotted cigar means less than nothing so far as quality, whether good or bad, is concerned; that the barometer affects cigars far more than the thermometer; that the silky-looking wrapper is as much to be avoided as the veiny one or the one that is oily in patches; that cigars should be neither so soft as to yield readily to the pressure of the fingers nor so dry as to crackle; that most of the talk about 'condition' is pure ignorance, the Americans being right in preferring a moist cigar, and the English equally right in preferring a drier one — the vital point in each case being the proper period of recovery from the seasickness that cigars contract as easily as their smokers, a period that varies with the length of the voyage; that except for the expert, who has given his whole life to the business, there are virtually no outward indications that can be relied upon in choosing a cigar; and that for the average man, anxious to find out whether a given Havana is of good quality throughout and will burn well, the only real test is to smoke it".

Source: The London *Daily Mail*, 19 April 1911.

ON THE COAST OF ENGLAND THERE ARE FIVE 'CINQUE PORTS'

'Cinque' (Five) ports were the Anglo-Saxon successors to a Roman system of coastal defence built to resist attacks by the Saxons. There were indeed originally five, as their name suggests, but in addition to Dover, Hastings, Hythe, New Romney and Sandwich, William the Conqueror appointed Rye and Winchelsea as more 'Cinque Ports', and gave them special jurisdiction, which were only abolished (apart from a few insignificant privileges) in 1855.

Deal, Faversham, Folkestone, Lydd, Margate, Ramsgate and Tenterden are known as other 'Limbs' of the Confederation of coastal defences in England's south-eastern coastal area.

THE MOST POPULOUS CITIES IN THE WORLD ARE LONDON AND NEW YORK

In 1939, the Greater London conurbation had a population of

8.6 million, which is roughly the population of Tokyo now, but the present population of London is only 7.1 million, so that Tokyo is by some good long way the most populous city in the world, and is increasing in numbers all the time.

SCOTTISH HIGHLAND CLANS COMPRISED A CHIEF AND HIS FOLLOWERS, WHO ALL BORE HIS NAME AND WERE RELATED TO HIM BY TIES OF BLOOD

This fallacy has been refuted by a study of rentals and similar documents such as Exchequer Rolls and Forfeited Estates Papers.

It can be proved that there could not have been any blood tie between the first chief of such clans as the Bissets, Chisholms, Grants and Frasers, whose chiefs were originally Norman. In fact, however, the same is true in the case of clan chiefs of purely Scottish origin. A Highland rental of 1505 (for Kintyre) shows a large number of surnames borne by long-term tenants on the estates of Macdonald, the clan chief. Similar pictures are presented by estates such as Lochiel and Clanranald which were forfeited after Culloden. Gregory, in *Collectanea de rebus albanicis* (published by the Iona Club), showed that these tenants were representatives of families which had been on the lands in question from long before, under a succession of different, and unrelated, chiefs. "They were not, nor did they claim to be, of the blood of the individual whom they acknowledged to be their chief. They appear to have formed the bulk of the population of the Highlands". Gregory amplifies the point by citing the case of the Stewart followers, 69 of whom were killed at Culloden, and a further 40 of whom were wounded. Between them, these followers bore 18 different surnames, none of them Stewart.

The word 'clan' has been understood in three different senses: the narrowest indicates the family of the chief himself; the next circle consists of families descended from that of the chief; the widest sense include followers lacking any kinship with the chief and his family. The third class has been called 'septs', but it is now clear that the term 'septs' (roughly 'divisions') ought to be applied instead to the second class, and the term 'followers' or 'tenants' would more helpfully describe the third class.

Sources include: Gordon Donaldson (ed.), *Common errors in Scottish history* (London, 1956).

WE KNOW THE INFLUENCE OF CLIMATE ON CIVILIZATIONS

Arnold Toynbee has maintained that “the greater the ease of the environment, the weaker the stimulus towards civilization”. On the other hand, Ellsworth Huntington has stated that “a favourable climate is an essential condition of high civilization”, and C.E.P. Brooks, author of *The evolution of climate* (1922) and *Climate through the ages* (1928) has observed that “the districts where civilization began probably had at that time the most stimulating climate in the northern hemisphere”.

It may be that Toynbee is wrong, or that Huntington and Brooks are wrong, or that all three are wrong. But they cannot all be right, and the truth is probably that climate has *an* effect but not a *crucial* effect, on the progress of civilization. Yet nobody has yet defined ‘civilization’ in a manner universally acceptable.

A MAN HAS BEEN CLONED

After *Your baby's sex: now you can choose* (New York, 1970) and *Brave new baby* (New York, 1972), the freelance journalist David M. Rorvik published the sensational best-seller *In His image: the cloning of a man* (New York, 1978).

Rorvik states in the last-named work that, in 1973, he was approached by a wealthy businessman, known here to protect his privacy as ‘Max’, who promised to spend US \$1 million to achieve a clonal reproduction of himself. The author spends a good deal of space describing his moral dilemma, and his eventual decision to do what was asked, alleging that a healthy clone was born in December 1976.

As Michael Crichton writes in the *New York Times Book Review* of 23 April 1978: “In an afterword, the author himself says that he does not expect anyone to accept the book as proof that cloning has occurred. In fact, the criteria of scientific evidence are simply absent. This means that the book is fundamentally of no interest to the scientific community, which can be expected more or less to ignore it — and this seems to be happening. The book is stupefyingly dull. The plot is highly unlikely, the characters sketchy and improbably motivated, and the narrator himself is by turns dimwitted and melodramatic”.

Is a human clone 'highly unlikely'? It seems that — at any rate in the near future — it is impossible. A. W. Leftwich, in *A dictionary of zoology* (3rd ed., London, 1973) defines 'clones' as 'parthenogenetic or asexual descendants from a single individual, all having the same genetic constitution'. It seems therefore that an organism would have to be simple before cloning could take place. This indeed turns out to be the case. *A dictionary of life sciences* (ed. by E. A. Martin, London, 1976) prints the following definition under 'clone'.

"1. A group of organisms that are genetically identical because they have been produced by some sort of non-sexual reproduction or by sexual reproduction involving a pure line. Typical asexual methods are vegetative propagation in plants and parthenogenesis in animals. 2. A population of cells descended from a single parent cell".

Now parthenogenesis is a type of reproductive process in which eggs develop normally without being fertilized by a male gamete, producing an individual usually genetically identical to the parent. In animals, the highest forms of life in which parthenogenesis occurs are the Rotifera (minute aquatic invertebrates) and the Arthropoda (including insects, spiders, and the crustaceans). Nothing higher than the shellfish and the spiders in the evolutionary cycle has been cloned, and anyone suggesting the contrary must show indiscutable proof.

See also: PREDICT YOUR BABY'S SEX WITH CERTAINTY.

THERE WAS A COCK LANE GHOST

In 1760 and 1761, a series of knockings, apparitions and similar phenomena was reported by one William Parsons, tenant of a house in Cock Lane, Smithfield, London. Crowds flocked to No. 33, Cock Lane, and confirmed the reports of a ghost of a former resident, one Mrs Kent.

In 1762 the fraud was detected by tracing the disturbances to Parsons, his wife, his daughter, and a female ventriloquist. The motive was discovered to be blackmail against Mrs Kent's widower. Parsons and his wife were pilloried and imprisoned.

Source: Andrew Lang, *Cock Lane and common sense* (London, 1894).

ONE PERSON CAN BE A COHORT

The American novelist Mary McCarthy has written, in *The groves of Academe*: "The old poet had left, accompanied by two of his cohorts". Now it is an author's privilege to coin neologisms, and to redeploy archaisms in the interests of a dense, vital vocabulary. But if recognised dictionary-meanings are to be changed, then some warning ought to be given if the common reader is not to be confused. In Roman times, a 'cohort' was a body of infantry forming one tenth of a legion. The term was applied also to a body of auxiliaries of roughly the same strength (300 to 600 men), and later also to a body of cavalry. A later meaning acceptable to many, cited in the *Oxford English Dictionary*, is the figurative use as 'a company, band; especially of persons united in defence of a common cause': that is, 'cohort' has become a collective noun, but not yet a singular. An old poet accompanied by two of his cohorts — if the last word were to be used correctly — would find himself pursued by up to twelve hundred people.

COINCIDENCES ARE AMAZING

The fairly full treatment given to this theme in volume 1 has, as expected, done nothing whatsoever to reduce the wonder of the gullible, who continue to find coincidences so remarkable that they attribute these phenomena to the category of 'supernatural' or 'miraculous'.

Nobody who has given probability theory more than a cursory glance is fooled by these outbursts, but it is worth analysing a 'coincidental' phenomenon that appears to be magical to all except those who have ever given a moment's thought to probability. The example comes from George Gamow's *One two three infinity*, and can be played as a party conjuring trick by anyone without facility at sleight-of-hand. The *fact* is that, of any twenty-four people selected at random, it is probable that two or more will have the same birthday. There are indeed 27 chances out of 50 that two of twenty-four will have the same birthday. The probability that the birthday of any two people will fall on the same day is $364/365$. The probability that a third person's birthday will differ from those of the other two is $363/365$, and so on, until the 24th person in the series involves odds of $342/365$. Now, the series of 23 fractions must be multiplied together to reach the

probability that all 24 will be different. The final product is a fraction reducing to 23/50. Therefore, on average, you would lose 23 times out of 50, and win your bet 27 times out of 50. On a technicality, one ignores February 29th, which lowers the probability, and the fact that birth dates tend to cluster at certain times of year, which increases the probability.

Interestingly, a coincidence of 2 birthdays is almost certain in a group of 40, and in a crowd of 100, you would be safe in taking odds of 3.3 million to 1! (It is, of course, already a mathematical certainty in a crowd of 366).

I verified Gamow's hypothesis in *Who's Who 1979* (London, 1979). If you take the first 24 names, you will find that two have birthdays on 6 November. If you take the first 24 names with full birth-dates in the *International Who's Who 1978-9* (London, 1978), you will find that two have birthdays on 29 May. And so on.

FEED A COLD AND STARVE A FEVER

The implication of this ancient, universal saw is that patients with colds must be given a great deal to eat, and those fevers very little. This is nonsense.

The original meaning might have been more intelligible as 'If you give too much food to a patient with a cold, he will then contract a fever, during which he will not desire to eat'. That is, that one must *not* give patients with colds a great deal to eat. This too is nonsense, for there is no known correlation between cold cure and the consumption of food. Those with a bad cold often have a fever too.

Patients with a cold normally require no more food than when they are in normal health, and no less. Patients in the early stages of fever will have little desire to eat, and in the later stages they will require extra food to make up their previous loss.

A CURE FOR COLIC

"For colic take the dung of a wolf with bits of bone in it if possible, shut it up in a pipe and wear during the paroxysm on the right arm or thigh or hip, taking care that it touches neither earth nor water", wrote Alexander of Tralles (550 A.D.). With doctors like Alexander, who needs illness?

Source: Alexander of Tralles, *Oeuvres médicales*, ed. by F. Brunet (4 vols., Paris, 1933-7).

MACHINES ARE MORE SENSITIVE TO COLOUR THAN ARE MEN AND WOMEN

The most accurate photo-electric spectro-photometers can detect no more than 5,000,000 different colours.

The unaided human eye, in the best possible conditions, can distinguish as many as 10,000,000 different colours.

Source: *Guinness book of records* (London, 1977).

THEO GIMBEL AND THE COLOUR-TREATMENT OF SHOCK

At the Hygeia Studios, near Tetbury, Gloucestershire, Theo Gimbel claims to treat shock and other forms of mental illness successfully by the use of such devices as a 'Colour Therapy Instrument' and a 'Colour Wall'. In a leaflet on the latter, it is stated that the "instrument has the effect of altering the rate and depth of respiration to some extent, and may, by deepening the respirations, prevent a state of shock from developing . . . Some preliminary research carried out on volunteer asthma sufferers suggests that relief is obtained for some of these patients when 'treated' with the Colour Wall . . . The instrument consists basically of two important forms: the outer one which is subjected to the dim level of light within the treatment area and the inner form which is lit by the arrangement of lights which have the task of illuminating the vertical and horizontal relief forms.

By the way of the special arrangement of lights the horizontal forms are stressed by the fading in of the blue lights, the vertical by the fading in of the red lights and both forms have been carefully designed so as to be noncompelling to the onlooker.

The texture of the forms is left so that the eye can see the material without being mystified. The outer form is blue and has an anticlockwise movement. There are deep psychological reactions to both these factors. The inner shape is white so as to reflect the true colour of the lights. The size is also significant in relationship to the average length of the human spine". The Colour Wall costs £750.

There is no experimental proof, in a statistically meaningful sense, that such a colour system has any of the healing properties attributed to it (doubtless in good faith), and clearly any patient suffering from mental distress would gain

more from the Cotswold ambience of serenity than from looking at any combination of colour patterns.

The Hygeia Studios also offer a 'Colour Level Lamp' with the advice that one should switch to yellow 'for obtaining feeling of detachment' or to orange 'for happy, relaxed but aware atmosphere'.

Or you could invest in a 'Three Dimensional Cross', advertised as follows: "As more and more churches are becoming aware of the rays of power and healing which radiate from the Altar — and indeed — from the very vestments worn by the Celebrant, the increase in spiritual power given by a Cross which points in all directions will be appreciated". But surely *every* sculptural cross ever made has been in three dimensions?

THE THREE PRIMARY COLOURS ARE BLUE, RED AND YELLOW

Apologies to all those readers who kindly wrote in to castigate me for my error on page 51 of volume 1. They are of course all right and I am wrong. The primary colours are blue, red and green. Another proof — if any were needed — that everything one reads must be scrutinised for mistakes. I'm still not doing it right.

COMBUSTION FALLACIES

The most tenacious of all fallacies concerning combustion is connected with the theory of phlogiston (see volume 1, p.193).

Two other major theories concerning combustion, less widely-diffused but equally false, are those of two scientists of the 2nd century B.C., Philo of Byzantium and Hero of Alexandria.

Hero, using the unscientific *a priori* method of enquiry, devised an 'eolopile' described in his *Pneumatics* (ed. Wilhelm Schmidt, Leipzig, 1899). Steam from the boiler passes through a side tube into a sphere, from which it escapes through upper and lower tubes which have their ends bent in opposite directions. The recoiling of the escaping steam causes the sphere to revolve. Hero's theory is that "bodies are consumed by fire which transforms them into finer elementary particles — namely, water, air and earth. That they are actually consumed is evident from the carbonaceous residue,

which, although occupying the same or a little less space than before combustion, nevertheless differs greatly with respect to the weight the material had at the beginning”.

Hero had access to the elaborate apparatus necessary for a correct solution to the problem of combustion, as did his contemporary Philo of Byzantium. Philo described the well-known experiment of burning a candle under an inverted vessel over water. It is observable that, after the candle's light is extinguished, water will rise a short distance into the vessel's neck. What is not self-evident is Philo's clever (but fallacious) explanation: that the corpuscles of air in the vessel are converted by the flame into finer particles of fire, which then escape through the pores of the glass, and the partial vacuum thus created causes water to ascend into the neck of the vessel.

Philo's explanation was accepted for many centuries in all parts of Europe.

Sources include: Charles A. Browne, 'Error in chemistry', in Joseph Jastrow (ed.), *The story of human error* (New York, 1936).

COMETS ARE PORTENTS

It is peculiar that the *Encyclopedia of superstitions* (2nd ed., London, 1961) by E. and M. A. Radford contains no index reference to comets, for superstitious fears of comets and what they are supposed to mean have bedevilled human life for several thousand years, and in many societies still do.

A typical example of such fears can be found in a book by the astrologer John Gadbury (1627–1704): *De cometis: or a discourse of the natures and effects of comets, as they are philosophically, historically, and astrologically considered. With a brief (yet full) account of the III late comets, or blazing stars, visible to all Europe. And what (in a natural way of judicature) they portend. Together with some observations on the nativity of the Grand Seignior* (London, 1665). There is of course no possible relationship between the appearance of comets and the course of earthly events.

COMMON SENSE

Acknowledgment is due to Stefan Kanfer for permission to reproduce some lines from an article, 'The uncommonness of

common sense', which appeared in *Time*, 11 June 1973, p.39.

"After half a year", wrote Mr Kanfer, "*Dr Atkins' Diet Revolution* remains a nonfiction bestseller . . . Only the commonsensical, apparently, have concluded that the less they eat, the lighter they weigh. Or that the more they exercise, the more fit they feel". He attacks the muddled thinking that fails to connect the necessity of insecticides to help fruit to ripen, and the fact that the death of insects leads to the death of birds, fish and mammals. He attacks the hypocrisy of adults who criticise the alleged 'drug culture' of youth but take too many sleeping pills and too much alcohol.

'Common' sense is so unusual in a complex society such as that of the twentieth-century West that it is often singled out for special notice when encountered. Cultures in the so-called 'Third World' are frequently based on political or religious monomanias, as indeed are those in the Communist world.

THE CONTINENTAL LAND MASSES HAVE ALWAYS BEEN FIXED

Despite the fact that Alfred Wegener showed how the hypothesis of Continental Drift could explain features of zoological and botanical distribution, for example, as early as 1912, it was only about 1960 that the mounting evidence in favour of Wegener's hypothesis finally disposed of the fallacy that the Earth's continents were always disposed as they are now. The large-scale error brought with it such fantastic fallacies as the 'land bridges' which were once thought (and until very recently) to have sunk without trace into the depths of the South Atlantic Ocean. Wegener pointed to corroborative evidence such as the occurrence of similar geological formations in West Africa and North-East Brazil that might once have been joined.

John Ziman observes that this important fallacy was held very widely in a mature and sophisticated field of science for more than half a century after it had been confuted. "Throughout this period", he notes, "the basic facts and hypotheses were well known, and there was no serious attempt to suppress publication of 'uncomfortable' truths by either side. The scientific system was working quite normally; individual scientists conscientiously carried out their research, which was communicated according to the 'norms' of our model. [See Ziman, pp. 4-5]. Unfortunately, in this

case the 'knowledge' produced by 'science' was not as reliable as we usually assume, and the 'map' of Earth history in the archive was hopelessly misleading.

"It is instructive, also, to note that the main arguments against continental drift came from mathematical physicists, who could easily show that the tidal mechanisms that Wegener had suggested were quite insufficient to bring about such large effects. But they failed to realize that this did not rule out some *other* mechanism which nobody had yet thought of. The epistemological irony is that the geologists — supreme experts in the observation and interpretation of visual patterns — rejected first-rate evidence from fossils, rocks and landscapes because they thought it was in conflict with quantitative mathematical reasoning which few of them really understood. This episode shows that pattern recognition is every bit as reliable as a source of consensible knowledge and as a means of arriving at a scientific consensus, as discourse in the logico-mathematical mode".

Sources include: A. Hallam, *A revolution in the earth sciences* (Oxford, 1973); H. Takeuchi and others, *Debate about the Earth* (San Francisco, 1967); and John Ziman, *Reliable knowledge* (Cambridge, 1978).

CONVERSION

The central fallacy of conversion from one set of beliefs to another set of beliefs is that one such set must be correct (and that the set to which one converted is the correct set).

An instructive document in the history of conversion is *Journeys in belief* (London, 1968), edited by Bernard Dixon. "*Homo sapiens* thoroughly enjoys an occasional mental catharsis", writes the editor, "an intellectual re-shuffle in which long-accepted and familiar ideas are jettisoned and others taken to heart. The outward signs are characteristic, whatever the ideology concerned. The neophyte is convinced that his newly adopted outlook provides the final answers to our most basic questions — why men behave as they do; why we are not more logical and compassionate; what is the purpose of life, if any".

Kenneth Charles Cox explains in this volume how he changed from Anglicanism to Roman Catholicism and then to Judaism; Martyn Greet explains his change from Christianity

to scepticism; John F. A. Williams from scepticism to Christianity, and so on.

The fact is that no set of beliefs, no matter how strongly held or defended, is either wholly wrong or wholly right. The beliefs that each of us holds is a compound of logical and illogical ideas derived from our hereditary and environmental circumstances, including the faith of our parents and teachers, the books we are told to read when young (and those we choose to read when older), and the ideas of our marriage partner, neighbours, friends at school, colleagues at work, political and religious associates, and the offerings of the mass media available to us. The less tolerant those around us, the more circumscribed we are in our beliefs. Let us therefore take nothing on trust from anyone, but consider what ideas and actions are best suited to our times.

John Keats describes in one of his letters how his friend Dilke “cannot feel he has a personal identity unless he has made up his mind about everything”, to which Keats adds with great percipience and honesty: “The only means of strengthening one’s intellect is to make up one’s mind about nothing — to let the mind be a thoroughfare for all thoughts, not a select party”.

WHO IS CONVERTED TO FALLACIES?

Numerous studies of religious, superstitious, political and other dogmatic systems indicate in vague terms the kind of person who is attracted to them, whether by ideological conviction (conversion) or as a matter of convenience (the Spanish Jews forcibly converted to Roman Catholicism to avoid death or expulsion at the hands of the Inquisition). If one ignores those who opt for a quiet life (Kenyans in mission schools who adopt Christianity to get a good education) and those who are concealed by official statistics (the non-Muslims in Libya’s official population figure of 100% Muslims), the ideological converts can be divided into seven groups. Eric Hoffer, in *The true believer* (New York, 1951) classifies them as follows:

1. The poor, whose creative abilities are frustrated by a multiplicity of hindrances such as malnutrition, illness, poverty, bigotry, and lack of educational opportunities.
2. The social misfits, such as victims of broken homes or

- criminal districts, who cannot find love and fulfilment in their alien environment.
3. The selfish and egotistical.
 4. The rebellious adolescent and retarded adult, whose desires, fantasies, and ambitions far exceed his capabilities of work and talent.
 5. Oppressed minorities of all types, who see in outlandish cults and organizations a way of 'getting their own back' on the rest of the world for real or imagined slights.
 6. The bored, including spinsters and lonely housewives.
 7. Sinners and potential sinners, who feel the need for nebulous or actual redemption.

CENTRE OF COSMIC BROTHERHOOD STUDIES

When next you are in Switzerland, you might care to look in at no. 15 Avenue E. Pittard, Geneva. Not only is the Centre "directed by extra-terrestrials and their Vicars on Earth" (Spokesman Adoniesis — job-title Extraterrestrial Scientist), but they have the cure for cancer (found by an Italian veterinarian, one Dottore Bonifazio).

I wonder if the cancer was brought by extraterrestrial visitors in the first place.

ALICE BAILEY AND THE COSMIC FIRE

In her book *Treatise on cosmic fire* (New York, 1970), the theosophist Alice Bailey deals with cosmology in such a way as to avoid comparison or contrast with any currently accepted workable hypothesis.

The scientist — or indeed the thinker or writer in any non-fiction book — has the obligation to begin by agreeing or disagreeing with a certain body of knowledge accumulated over the centuries (or decades or even years, in the case of newer fields of study).

Alice Bailey does not offer any such criticism of other sets of cosmological beliefs as a basis for her own views and thus renders her work useless. The same must be said of her disciples such as David Tansley, (whose summary of Bailey's cosmology appears in Rick J. Carlson's *The frontiers of science and medicine*, London, 1975).

Tansley has also written *Radionics and the subtle anatomy of man* (London, 1972), which is unintelligible to those unable

to grasp, psychically or intellectually, such notions as a 'threefold monad' or a 'solar angel'. We must not be afraid to state that the profusion of such 'information' does not help youngsters to clarify their ideas of the complex world they live in.

THE HUSBAND OF A COUNTESS IS A COUNT

In French, a *comtesse* is the wife of a *comte*, and in Italian, a *contessa* is the wife of a *conte*. But in English, a countess is the wife not of a count, but of an earl, from the Anglo-Saxon *eorl* (a warrior). The word 'count' (originally Lat. *comes*, Acc. *comitem* meant 'companion') eventually became a military title, as in *Comes littoris Saxonici* (Count of the Saxon Coast), the Roman general responsible for the southeastern coastline of Britain.

CRANIOLOGY

The theories of Franz Josef Gall were dealt with in volume 1, but Dr. Horst Bettelheim writes from Lübeck that one should give equal attention to Johann Kaspar Spurzheim (1776–1832), whose theories of craniology, or phrenology, seemed to reinforce those of Gall, though in fact they were merely similar.

Common sense was always a virtue of the essayist William Hazlitt, and he never showed it to better advantage than in *The plain speaker: opinions on books, men and things* (2 vols., London, 1826), in Essay XIV, 'On Dr Spurzheim's theory'. Spurzheim, in Hazlitt's sceptical view, "is the Baron Munchausen [sic] of marvellous metaphysics. His object is to astonish the reader into belief, as jugglers make clowns gape and swallow whatever they please. He fabricates wonders with easy assurance, and deals in men 'whose heads do grow beneath their shoulders, and the anthropophagi, that each other eat.' He readily admits whatever suits his purpose, and magisterially doubts whatever makes against it. He has a cant of credulity mixed up with the cant of scepticism — things not easily reconciled, except by a very deliberate effort indeed". Hazlitt selects the following as a specimen of Spurzheim's peculiar reasoning:

"The doctrine, that every thing is provided with its own properties, was from time to time checked by metaphysicians

and scholastic divines; but by degrees it gained ground, and the maxim that matter is inert was entirely refuted. Natural philosophers discovered corporeal properties, the laws of attraction and repulsion, of chemical affinity, of fermentation, and even of organization. They considered the phenomena of vegetables as the production of material qualities — as properties of matter. Glisson attributed to matter a particular activity, and to the animal fibre a specific irritability. De Gorter acknowledge in vegetable life something more than pure mechanism. Winter and Zups proved that the phenomena of vegetable life ought to be ascribed only to irritability. Of this, several phenomena of flowers and leaves indicate a great degree. The hop and French-bean twine round rods which are planted near them. The tendrils of vines curl round poles or the branches of neighbouring trees. The ivy climbs the oak, and adheres to its sides, &c. Now it would be absurd to pretend that the organization of animals is entirely destitute of properties: therefore Frederick Hoffman took it for the basis of his system, that the human body, like all other bodies, is endowed with material properties”.

Hazlitt, as open-mouthed at all of this as any twentieth-century reader, comments: “ ‘Here be truths’, but ‘dashed and brewed with lies’ or doubtful points. Yet they all pass together without discrimination or selection. There is a simplicity in many of the propositions, amounting to a sort of *bonhomie*. There is an over-measure of candour and plainness. A man who gravely informs you, as an important philosophical discovery, that ‘the tendrils of vines curl round poles,’ and that ‘the human body is endowed with material properties’ may escape without the imputation of intending to delude the unwary. But these kind of innocent pretences are like shoeing-horns to draw on the hardest consequences. By the serious offer of this meat for babes, you are prepared to swallow a horse-drench of parboiled paradoxes”.

But Hazlitt’s sparkling scepticism did not convince everybody. Sir Arthur Conan Doyle, whose belief in fairies and spirit photographs (qq.v. in volume 1) was as total as his mastery of the detective story, makes the great Sherlock Holmes deduce from a large hat that its wearer was ‘highly intellectual’. How many readers would recognise in this inference a flattering allusion to a phrenological dogma of the time?

Walt Whitman's belief in phrenology was heightened by the discovery that he was well developed in all faculties, and he dotted *Leaves of grass* with craniological exhortations of the type 'O adhesiveness — O pulse of my life', adhesiveness being an imagined phrenological faculty concerned with mutual attraction.

As early as 1807 a commission set up in France to investigate phrenology found no evidence to support the theories whatsoever, and in 1901 it was definitively proved that brain lesions cause disorders totally unconnected with the map of the skull drawn up by competing phrenologists.

THE FALLACY OF CREATIVE THINKING

The author of the above title (there is no book — just the title) is the American hoaxer Alan Abel, of Zanesville, Ohio.

Abel gave a spoof lecture to advertising executives on the inefficiency involved in thinking up new ideas when one can simply steal them from other people. He was astonished to receive urgent requests for his 'book' from the president of a large advertising agency.

This is hardly surprising, however, for it took three years for the American public to discover that Abel's Society for Indecency to Naked Animals (despite the obvious legpull in its name) was merely a parody of the various leagues to inculcate puritanical behaviour. Something of the sort induced Abel to announce as visitors from France the Topless String Quartet, and the 1971 Sex Olympics, or the International Sex Bowl. He really did get asked for tickets, interviews, and the film rights. The 'Sex Olympics' apparently fooled the American columnist Harriet Van Horne, and the *London News of the World*, among others.

CROCODILES SHED TEARS OF REMORSE

Pliny's colourful account of the crocodile in the *Historia naturalis* is as full of fallacies as Seneca's in the *Naturales quaestiones*. Most classical authors thought that 'crocodile tears' were false tears indicating hypocritical remorse: Aelius Spartianus (c. 300 A.D.) indicated that these were the kind of tears that Caracalla shed. As recently as 1642, Sir John Suckling (who invented the game of cribbage) could write "She's false, false as the tears of crocodiles" in his play *The Sad One* (Act IV, sc. 5).

But as usual Lewis Carroll was nearer the truth when, in *Alice's adventures in Wonderland* (how many readers commit the fallacy of miscalling the novel *Alice in Wonderland?*), he wrote in parody:

“How doth the little crocodile
Improve his shining tail,
And pour the waters of the Nile
On every golden scale!

How cheerfully he seems to grin,
How neatly spread his claws,
And welcomes little fishes in
With gently smiling jaws!”

Note the *little* fish. The operative word is ‘little’, for when it is champing great lumps of meat and only then does the crocodile shed the tears in question. Let L. J. and Margery Milne take up the story in *The balance of nature* (New York, 1960, p. 57): “While it breaks up its larger victims into pieces before trying to swallow them, it gulps larger food-chunks than it can easily manage. When a large chunk goes down often the crocodile gasps for air . . . and at these times its tear glands discharge copiously”.

CYCLES OF HISTORY

In volume 1 we examined the fallacy **HISTORY REPEATS ITSELF**, and noted that ‘nothing can be repeated identically’, whether in science or in history. There are too many variables which must be taken into account.

However, Giambattista Vico (1668–1744) is only one of the millions of people, learned and lay alike, whose concept of the world they live in has been hopelessly confused by the fallacy that ‘this kind of thing happens every hundred years’. Vico made a false analogy between the life of a human being and the course of a civilization. He argued that a man or woman, in the course of a lifetime, passes through phases of feeling, imagination and thinking. In the same way, a civilization passes through ages of gods, heroes, and humanity. A purely bestial phase passes into a primitive period, then to an intellectual and spiritual period, and finally to an era of humanity. The ‘energies’ of the civilization then fade and die away, to be followed by another primitive phase. The problem

with this world-view is that it is entirely fallacious as a *principle*, even if it can be made into a Procrustean bed that certain civilizations can be stretched to fit. In what sense, for instance, does the great and enduring civilization of China correspond in phases to the civilizations of the Congo pygmies or the Indians of the Canadian plains? Similar cyclical theories, attractive in their simplicity but wholly useless as tools for the understanding of the course of human societies, have been propagated by Oswald Spengler and Arnold Toynbee, but their *principles* are no more scientific than those of Vico's *Principi di una scienza nuova intorno alla natura delle nazioni* (Naples, 1725).

The fallacy that 'knowledge proceeds by the removal of one error at a time and its replacement by a truth' was never more amply demonstrated, two and a half centuries after Vico, than by Edward R. Dewey, in his silly book *Cycles: mysterious forces that trigger events* (New York, 1971). If you have — as I am afraid you *do* have (in Pittsburgh) — a Foundation for the Study of Cycles, then, friends, what you will get is a series of studies of cycles. Even if the cycles aren't there.

John Sladek has examined Dewey and the Cycles thoroughly in *The new apocrypha* (London, 1974), exposing the fallacies inherent in the theories of cyclical effect in weather, high finance, and the abundance of tent caterpillars in New Jersey. He notes the existence of two types of fallacy: cycles which exist and are not mysterious, though claimed to be so by Dewey; and cycles which do not exist, but are claimed by Dewey to be real. An example of the first type is that the abundance of fox, lynx, wolf, marten, mink, coyote, hawk and owl reaches a maximum every 9.6 to 9.7 years, and then falls again. To Dewey, this is mysterious. John Sladek looks for a natural explanation instead, and finds one. "We're also told", he writes, "that the incidence of a certain disease in North American humans follows the same cycle. The disease is tuleremia, or rabbit fever. Hm. Sure enough, the rabbit abundance follows the same cycle. Obvious cause-effect relationships between rabbits, rabbit-connected disease, and rabbit predators come to mind".

The second type of fallacy (the cycles which are alleged to exist but are in fact imaginary) is provided by Professor Raymond H. Wheeler, once of the University of Kansas, who has attempted to relate history to weather. Both, he states, run

in 400-year cycles of four phases, each of a century (though no rational explanation is offered for such a bizarre theory). The first period has cold and dry weather, corresponding to anarchy and weak governments; the second is warm and dry, with stronger governments; the third is cold and wet, with dictatorships; the fourth is warm and wet, with dissolving states. It would be a remarkable contribution to knowledge if such a scheme could be applied to each civilization at every period, for it would then be possible to work out where a particular civilization stood, and how it was likely to proceed in terms of strength and stability.

The problem with cycles is that they don't fit, if they can be found. But generally they resemble the Emperor's new clothes. They just aren't there at all.

D

“A doubt that doubted everything would not be a doubt”. — LUDWIG WITTGENSTEIN, *Über Gewissheit: On certainty* (Oxford, 1969)

THE ‘DAME TROT’ OF CHILDREN’S LITERATURE ONCE EXISTED

Children’s literature is filled with references to, and stories about, a shadowy figure called Dame Trot, related by some to the go-between Urraca (known as ‘Trotaconventos’ or ‘Trot-the-Convents’) in Juan Ruiz’s 14th-century *Libro de buen amor*. She appears in English in such works for children as *Old Dame Trot and her comical cat* (London, 1803) and its *Continuation* . . . (London, 1806).

Perhaps the mythical Dame can be traced back to the medical school which flourished at Salerno, in southern Italy, from the eleventh century to the fourteenth. A gynaecological text-book produced at Salerno, *De passionibus mulierum*, was long attributed to a woman professor named Trotula. However, someone interested more in truth than in legend discovered that the famous ‘Trotula’ was in fact a Salernitan male doctor called ‘Trottus’.

DANTE CALLED HIS COMEDY ‘DIVINE’

Dante Alighieri wrote his great trilogy as *La Commedia* (as opposed to a ‘tragedy’) in the early 14th century, but it was not printed until 1472, at Foligno. The Botticelli drawings probably commissioned by Lorenzo de’ Medici inspired a remarkable series of engravings by Baldini first published in 1481. The epithet ‘divina’ was coined neither by Dante himself nor by any of his contemporaries, but appeared first on the title-page of Lodovico Dolci’s edition of the great poem dated 1555.

FALLACIES ON THE DEAD SEA

Only two fallacies were recorded about the Dead Sea in volume 1 (page 63), but J.B. Salgues (*Des erreurs et des préjugés répandus dans la société* (3rd ed., Paris, 1818, vol.1, pp. 262 ff.) confutes several more: that its waters can support iron and bricks, and that its vapours kill fish, birds, and plants.

The major source of Dead Sea fallacies is, however, Andrew D. White's *A history of the warfare of science with theology in Christendom* (London, 1955, 2 vols. in 1, vol. 2, pp. 209 ff.). Dr White deals with the curious fallacy of Lot's wife turned into a pillar of salt (there are analogous false explanations for curious natural phenomena in all other religions and mythologies); the foul smells of the area attributed to supernatural causes (actually caused by sulphur in mineral springs); the error that "the very beautiful apples" that grow there will "burn and are reduced to ashes and smoke as if they are still burning"; the notion that the Dead Sea is the mouth of Hell (due to the hot springs in the area); and the hoary errors repeated in Sir John Mandeville's *Travels* that "if a man cast iron therein, it will float above. And if men cast a feather therein, it will sink to the bottom, and these be things against kind".

Andrew White continues: "In the fifteenth century wonders increased. In 1418 we have the Lord of Caumont, who makes a pilgrimage and gives us a statement which is the result of the theological reasoning of centuries, and especially interesting as a typical example of the theological method in contrast with the scientific. He could not understand how the blessed waters of the Jordan could be allowed to mingle with the accursed waters of the Dead Sea. In spite, then, of the eye of sense, he beheld the water with the eye of faith, and calmly announced that the Jordan water passes through the sea, but that the two masses of water are not mingled".

Bernhard von Breydenbach, Dean of Mainz, claimed that the serpent Tirus is found in the Dead Sea "and from him the Tiriatic medicine is made. He is blind, and so full of venom that there is no remedy for his bite except cutting off the bitten part. He can only be taken by striking him and making him angry; then his venom flies into his head and tail". Felix Fabri, a preaching friar of Ulm, describes how the Dead Sea fruit is "filled with ashes and cinders" when mature. The

German professor and theologian Bunting explained to readers of his *Itinerarium sacrae scripturae* (Magdeburg, 1589) that the water of the Dead Sea “changes three times every day, that it “spits forth fire”, that it “throws up on high” great foul masses which “burn like pitch” [this is naturally occurring bitumen] and “swim about like huge oxen”. A certain Jean Zvallart reported in his *Très-dévoit voyage de Ierusalem* (Antwerp 1608) a new error that crocodiles abound in the Dead Sea. The French naturalist Pierre Bélon told how he had seen the stones on which the disciples had slept during the prayer of Christ — and it was he who reported a chat somewhere between Bethlehem and Jerusalem with a man who had heard that “a man was once sowing peas there, when Our Lady passed that way and asked him what he was doing; the man answered, ‘I am sowing pebbles’, and straightway all the peas were changed into these little stones”. That will teach you to be sarcastic to the Virgin Mary.

De statua salis (Jena, 1692) by Wedelius, a Professor of Medicine at the University of Jena, jumbled up thunderbolts, sulphur, salt, theology and chemistry in the following bewildering conclusion: a thunderbolt, flung by the Almighty [can he mean Zeus or Wotan, perhaps?] calcined the body of Lot’s wife, and at the same time vitrified its particles into a glassy mass looking like salt. Earlier, a Franciscan monk called Zwinner had identified not only a pillar of salt as Lot’s wife (such pillars are of course constantly forming and breaking up), but even a neighbouring pillar as a little dog turned to salt (*Blumenbuch des heyligen Landes*, Munich, 1661).

The great works on the theological necessity for turning Lot’s wife into salt are Franciscus Quaresmius of Lodi’s *Historica, theologica et moralis Terrae Sanctae elucidatio* (2 vols., Antwerp, 1631), and *De uxore Lothi in statuam salis conversa* (Copenhagen, 1720) by the theologian Masius. The latter scholar comes to the apparently ingenious conclusion that Lot’s wife must have been turned into a pillar of salt, because many travellers have seen a pillar of salt and the positive testimony of those who have seen it must outweigh the negative testimony of those who have not!

There are *nineteen* more pages devoted to fallacies concerning the Dead Sea in Andrew White’s fascinating compendium, to which readers are referred.

Sources include: Andrew D. White, *A history of the warfare of science with theology in Christendom* (London, 1955).

FALLACIES CONCERNING DEAFNESS AND THE DEAF

Fallacies concerning the deaf (1883), an anonymous publication reprinted in New York in 1976, should be supplemented by Harry Best's *Deafness and the deaf in the United States* (New York, 1943), and especially ch. XVIII, 'Popular conceptions regarding deaf', pp. 327–338.

Mary Plackett, Chief Librarian of the Royal National Institute for the Deaf, London, writes: "Deafness — which has been described as 'the least understood and most misunderstood of disabilities' — is an area full of fallacies. Those we most commonly encounter are:

1. *'Deaf and dumb'* (a term now frowned upon because it is so open to misinterpretation): 'dumb' does *not* imply 'unable to speak'; a profoundly deaf child is physically capable of speech but cannot learn to speak in the normal way, which is by imitating what he hears said. This may seem like common-sense, but the link between hearing and speech needs explanation as few, if any, people realise it intuitively. Also, 'speech' means 'language' as well as articulation; learning how to use words is equally dependent on imitation, which is why the reaction 'Well, at least they can read and write' shows a lack of understanding of the situation.

Nor does 'dumb' mean 'stupid'; a child may be multi-handicapped, both deaf and mentally handicapped, but deafness *per se* is not an intellectual handicap. From this, it is apparent that the results of deafness in infancy and early childhood are totally different from those of deafness acquired in adulthood, and the two groups have little in common.

2. *Lip-reading*. It is only in popular fiction that it is possible to lip-read a bearded stranger side-view across a smoke-filled café! Lip-reading is in fact *very difficult*, even in ideal conditions, and relies largely on guesswork, as many sounds look alike on the lips; it is effective only in a one-to-one conversation.
3. *Hearing Aids*. These do *not* restore normal hearing in the same way that spectacles restore normal vision. Deafness is more often a problem of discrimination than lowered volume, so amplifying sound, which is what a hearing aid

basically does, may be helpful but does not solve the problem.

4. *Sign Language*. This is *not* universal, but differs from country to country and is in fact far more regionally varied than spoken language because it has not been subjected to the standardising influence of the mass media. It is not merely a pantomimic representation of spoken language, but a language in its own right, with a grammatical structure which does not correspond to spoken English, for example". (Personal communication, 17 December 1979).

Harry Best points out that, because of ignorance, the general public may treat the deaf as "extraordinary, exceptional, or odd — out of the way, out of place and out of tune with, divergent from, at variance to, the general population. The deaf are liable to be looked upon as 'queer' or abnormal, and at times as even surly, or uncivil, or rude, or brutish; they may be regarded as morose or moody — perhaps without capacity to laugh; they are to be approached . . . with a degree of caution; they may even be shunned or rebuffed". The famous philosopher Herbert Spencer fell into this trap in his *Principles of sociology* (London, 1897, p. 827), where he writes in error: "A brute thinks only of things that can be touched, seen, heard, tasted, etc.; and the like is true of the untaught child, the deaf-mute, and the lowest savage". [Since the passage is reprinted from *The Nineteenth Century* (Vol.15, 1884), it is strange that neither Spencer nor his editor noted that, however few a deaf-mute's capacities may be, hearing can hardly be one of them!]

In scientific terminology, more harm than good is often done by grouping the deaf with the 'defective classes' as is so often done. But the differences separating each such group from another are often greater than the differences between each group and the rest of the population. Thus, in some American legal works (including the *Corpus Juris*), the deaf have been classed under the heading 'insane' in connection with wills, and the witnessing of documents. In special U.S. census reports before 1900, the deaf and blind were included in the 'Dependent, Defective and Delinquent' classes.

"Another serious misapprehension respecting the deaf", notes Harry Best, "arises from the impression not infrequently current, and apparently encouraged at times in the proceedings of a scientific body, to the effect that a large

proportion of the deaf are so either because of a similar condition in their parents or because of the existence in the parents of some physical disease". There are no grounds for this common fallacy. Nevertheless, we find in the handbook of the Child Welfare Exhibit in New York in 1911 (on page 38): "Mating of the Unfit. 'The Law'. Marriage of cousins, insane or feeble-minded, alcoholic, syphilitic parents and effects. The cost — 7,369 blind infants, 89,287 deaf and dumb, 18,476 feeble-minded".

Other fallacies concerning the deaf are those which consider them in some way homogeneous as a group, though they are in fact as representative of the whole of society as those who happen to bump their knees on a wall; that they are wholly dependent, which in fact is seldom the case; and that, as a group of people, they are unhappy and wholly to be pitied, when many of the deaf lead a full and happy life and indeed, in the words of Harry Best, "all things considered, cheerfulness may be said to be an attribute of the larger number of the deaf".

THE CHRISTIAN MARRIAGE SERVICE ORIGINALLY INCLUDED THE WORDS 'TILL DEATH US DO PART'

The longer that you think about it, the stranger the phrase appears. In fact, it was not originally 'Till death us *do* part' or even 'Till death us *does* part' but 'Till death us *depart*' until 1662, when the verb 'depart' was still also transitive. It meant 'divide' or 'separate', and was used by Barrow in 1667, for example: "The closest union here cannot last longer than till death us depart".

It was in 1662 that 'depart' was changed in the marriage service to 'do part', grammatically also in the subjunctive mood and hence equally correct.

THE DEATH-WATCH BEETLE'S TICKING PRESAGES DEATH

The natural noise made by the genus of wood-boring beetles *Anobium* is a kind of click. Many nervous children and even adults have been taught in misnamed 'fairy' stories that Death personified comes knocking at your door and, when you hear a knocking without anyone apparently near, the hour of your death is nigh.

An illogical connection is made between two events or ideas causally unrelated and, among those susceptible to heart trouble, it is quite true that death by shock might ensue. All the more reason for destroying at its root the baseless, ignorant belief in the menacing power of the Anobium beetle. It is also of course true that if you ignore a death-watch beetle long enough, thinking it to be patient Death, your walls and ceilings will eventually crumble and the prophecy will be fulfilled in a different way!

DE BONO'S FIVE WAYS TO BE WRONG

"Some characteristic mistakes are a natural part of the thinking process", writes Edward de Bono in his *Practical thinking* (London, 1971). "These mistakes cannot be avoided because they arise directly from the way the mind works". However, one must always be able to recognise the kinds of common mistake made in everyday thinking.

1. The monorail mistake. This involves going from one idea to another without taking into account factors extrinsic to those ideas. Such mistakes are of the type 'Chinese Communism is a good thing for China, so it must be a good thing for Spain'.
2. The magnitude mistake. This is the mistake of the type 'If you don't wash the dishes, you can't love me like Jessie loves her husband', which ignores the great love that might have been displayed by the wife's working for 40 hours as a secretary while her househusband looked after the baby and cooked the meals.
3. The misfit mistake. This is the mistake of the type 'You sound just like Gwilym on the 'phone and because you have a Welsh accent you must be Gwilym'.
4. The must-be mistake. Arrogance is responsible for the closed mind which resists examining alternative explanations which remain within the bounds of credibility. This mistake is of the type 'Dinosaurs all died out within a relatively short period, so someone must have shot the dinosaurs, so we must find out who it was'. See also **DINOSAURS COEXISTED WITH MEN**.
5. The miss-out mistake. This involves selecting a solution which covers part of a problem, but not the whole of it. A propaganda film may show a magnificent new hospital in a poor country as evidence of progress, while missing out the

pictures of children in the next street suffering from disease and malnutrition.

Edward de Bono is quick to point out that these mistakes are not confined to the stupid, careless, or ignorant: "Even the most intelligent and highly educated people make exactly the same kind of mistake. They may be dealing with ideas like political stability rather than the building of a garden shed but the type of mistake is the same." One can recognise these mistakes in the arch-patriot, in the racist club, in the religious cult, in the political terrorist, and in the next-door neighbour who won't speak to you because of something you once said about a friend of his that he did not like.

Our author sadly reflects that you can probably remember "things you were taught at school about geography (valleys, river deltas, rice-growing countries, etc.) and about history (dates of battles, names of kings, etc.) But can you remember what you were taught about thinking?"

TO 'DECIMATE' AN ARMY IS TO DESTROY ALL BUT A TENTH

The Latin *decem* ('ten') is the root of the verb 'to decimate' which writers regularly use to mean 'slaughtered to such an extent that only one tenth survived', in a military context.

But a decimated army is reduced *by* a tenth, not *to* a tenth, so that in fact nine-tenths survive, and a decimated army of a hundred can be restored to its former strength by the recruitment of 10% of its reduced numbers plus one soldier.

THE AMERICAN 'DECLARATION OF INDEPENDENCE' WAS SIGNED AND PROCLAIMED ON 4 JULY 1776

Montagu and Darling carefully demolish these fallacies (for there are three of them) in their *Ignorance of certainty* (New York, 1970).

"It is a fact that members of the Second Continental Congress did *not* sign the document known to fame as the Declaration of Independence on 4 July 1776. American independence was *not* proclaimed to the world — as so often asserted — on that date. The official name of the document was *not* "the Declaration of Independence".

Firstly, independence was resolved — and the signing took place — on 2 July 1776. Secondly, it was on 3 July when the

document was first published in two Pennsylvanian papers, the *Gazette* and the *Journal*. Congress voted on the Declaration on 4 July, but it was not until 8 July that the document was proclaimed by being read publicly from the balcony of Independence Hall. Thirdly, the official title of the document is "The Unanimous Declaration of the Thirteen United States of America", the word 'Independence' occurring nowhere in the title.

NOBODY BELIEVES IN THE DEVIL ANY MORE

The Christian notion of the Devil, or Satan, derives from the post-exilic Hebrew concept, itself influenced by Babylonian and Assyrian traits, though the Hebrew notion was originally that of an 'opponent'. Solomon is said, in his message to Hiram, King of Tyre, to have congratulated himself on having no 'Satans', and was thus enabled to build the Temple, which his warlike father David had not been able to accomplish. In later Judaism, the idea of Satan is coloured by Persian dualism, and Samael, highest of the angels, merges with Satan into a single entity.

The New Testament Satan reproduces the later characteristics of his Hebrew prototype. In Matthew he becomes 'Prince of Demons', and in Ephesians we find the Devil ruling over a world of evil beings who dwell in the lower heavens.

In the Middle Ages, belief in Satan, satanic powers and witchcraft grew to epidemic proportions; both torture and burning threatened those who fell foul of the authorities suspicious of heresy, and Protestantism was as virulent in its seeking-out of the 'devil-haunted' as the Roman Catholicism from which it derived fear and irrational loathing of an imaginary evil 'being'. In fact, belief in the devil is not decreasing.

Dr Clyde Z. Nunn, of the Center for Policy Research in the U.S.A., has shown that belief in the existence of the Devil *rose from 37% to 48%* in the period from 1964 to 1973. Dr Nunn ascribes the growing belief to 'uncertainty and stress' at a time 'when things seem to be falling apart and resources seem limited for coping with it'.

Sources include: *Tucson Daily Citizen*, 4 April 1974.

QUOTE THE BIBLE AT THE DEVIL AND HE WILL DISAPPEAR

Mrs Brenda Rasmussen writes from Turku, Finland, that exorcism and other rites concerned with casting out devils still practised today, as in the Middle Ages, use words from the Bible as part of the technique. Yet when, in Matthew iv. 5–6, the Devil urges Jesus to cast Himself down from the pinnacle of the Temple as experimental proof of His Divinity, the Devil was actually quoting from Psalm 91. [Christ's answer is a mixture of passages from Deuteronomy, and both quotations are from the Septuagint (Greek) version of the Old Testament rather than from the Hebrew].

It seems that in the Devil's own diablology, if you quote the Bible at Jesus He will disappear.

ALL WHO POSSESS THE KOH-I-NOOR DIAMOND DIE AN UNNATURAL DEATH

If anything is particularly valuable, such as the treasure of Tut-Ankh-Amun in Egypt (see **CURSE OF THE PHARAOHS**, vol.1), then the finders or owners risk being at best robbed, and at worst, killed by those covetous of it. Hence the mythical 'curses' surrounding these objects. In a radio programme entitled *The mountain of light* (BBC Radio 4, 19 December 1977), there was another reference to the 'unnatural death' which awaited any owner of the Koh-i-Noor diamond. In 1739 the Koh-i-Noor is recorded in the possession of Nadir Shah, Emperor of Iran. In 1813 it passed to the Rajah of Lahore, from him to the British East India Company, and from the Company to Queen Victoria in 1850. I can't speak for the officials of the East India Company, but Her Majesty's peaceful, natural death on 22 January 1901 is as well attested as any other event in history. It makes a good story, but does not *anyone* think to ask whether it might be wrong?

DIAMONDS CANNOT BE SPLIT BY A HAMMER ON AN ANVIL

Diamond is graded 15 on the 15-point Mohs Hardness Scale, and is thus the *hardest* substance known, but it is relatively *brittle*. Yet Pliny the Elder convinced antiquity (and the belief persisted until the 19th century in diamond-rich South

Africa) that ‘these stones are tested upon the anvil, and will resist the blow to such an extent as to make the iron rebound and the very anvil split asunder’. There are so many errors in Pliny that one is tempted to wonder whether he was writing, delightedly, with tongue in cheek to discover whether he could indeed fool all of the people all of the time.

In 1476, Swiss mercenaries found diamonds belonging to Charles the Bold, Duke of Burgundy, after the Battle of Morat, and struck them to test for genuineness. They powdered — so they were!

The clever French jeweller Jean-Baptiste Tavernier (1605–89), who visited the Indian diamond mines in the 17th century, found that some merchants knew the true facts, but persuaded simple miners that their diamonds were not real by breaking them with a hammer. They proceeded to make away with the pieces after the disappointed miners had left.

Source: Eric Bruton, *Diamonds* (2nd ed., London, 1978).

MOISSAN PRODUCED DIAMONDS FROM GRAPHITE IN 1893

In 1893, the French chemist Ferdinand Moissan claimed that he had produced diamonds after dissolving graphite in molten cast iron. Most of the objects found were black and impure, but one object was colourless and almost a millimetre long. Moissan was therefore credited with the production of synthetic diamonds. However, his results were never repeated, and it is believed that they were falsified by one of Moissan’s assistants, who had wearied of the fruitless experiments, and decided to end them by secretly introducing a real diamond of little worth into the molten cast iron.

In 1962, with a pressure of 200,000 atmospheres and a temperature of 5,000°C (conditions not available to Moissan), graphite was turned to diamond without the use of a catalyst.

Source: Isaac Asimov, *Guide to science* (2 vols., New York, 1972).

FRANCISCO SÁNCHEZ AND THE DIFFICULTY OF ATTAINING KNOWLEDGE

A Jewish doctor who taught and practised medicine successively in Montpellier, Rome and Toulouse, Sánchez (1552–1632) is best known for a Latin *Tractatus de multum*

nobili et prima universali scientia, quod nihil scitur (Lyons, 1581), which has been translated into Spanish by Marcelino Menéndez y Pelayo as *Que nada se sabe* (Madrid, 1923?), the title signifying 'That nothing is known'.

Like his predecessor (and distant relative) Michel de Montaigne, Sánchez valued Aristotle's teaching in the field of natural science, but in philosophic and scientific thought he repudiated the unquestioning obedience given to Aristotelian authority, and concluded that 'nothing is known' for certain except by experiment and observation. Sánchez taught that knowledge cannot be attained through the long-held syllogistic mode of reasoning of the scholastic philosophers, who attached arbitrary definitions to words. Perfect knowledge is denied to men, who can only gradually and by painstaking trial and error approach a state of imperfect knowledge. Sánchez opposed superstitions, such as astrology and prophecy, which are still held vigorously today in certain countries and in certain sections of the population. His works have apparently never become available in English.

Sources include: Philip Ward, *The Oxford Companion to Spanish Literature* (Oxford, 1978).

DINOSAURS COEXISTED WITH MEN

"I think the fallacy is pretty obvious when pointed out", writes Stuart Campbell from Edinburgh, "but it is one that experts do not seem to bother to correct. Prehistoric man did not co-exist with dinosaurs, but appeared some sixty to seventy million years after dinosaurs died out. This is a fallacy perpetuated by many films, and it will be hard to eradicate".

Thinking back, I can indeed remember a 1970 film, *When dinosaurs ruled the Earth* with Victoria Vetri and Robin Hawdon, showing absurd scenes in which human beings are threatened by contemporary dinosaurs! In *TV Movies 1979-80* (New York, 1978), edited by Leonard Maltin, the reviewer praises the film's 'honourable attempt to simulate period!'

DISPROOF AND THE INCREASE OF FERVOUR

The conditions under which increased fervour is to be expected following the disproof of any belief have been listed

as follows by Leon Festinger and others in *When prophecy fails* (Minneapolis, 1956).

1. A belief must be held with deep conviction and it must have some relevance to action; that is, to what the believer does or how he behaves.
2. The person holding the belief must have committed himself to it; that is, for the sake of his belief, he must have taken some important action that is difficult to undo. In general, the more important such actions are, and the more difficult they are to undo, the greater is the individual's commitment to the belief.
3. The belief must be sufficiently specific and sufficiently concerned with the real world so that events may unequivocally refute the belief.
4. Such undeniable disconfirmatory evidence must occur and must be recognized by the individual holding the belief.

THE INFALLIBILITY OF CHURCH DOGMA

St. Ignatius Loyola, author of the *Ejercicios espirituales* and founder of the Society of Jesus, gave the following as the thirteenth of 'The Rules for Thinking Within the Church': "If [the Church] shall have defined anything to be black which to our eyes appears to be white, we ought in like manner to pronounce it to be black".

This assertion, defying all rules of observation and experimental proof, has been echoed by all totalitarian regimes in some such terms as 'we will batter the warmongers to death with peace', by a miner quoted with approval by the Czech writer František Kubka (Prague Radio, 17 January 1951) and cited by Harry Hodgkinson in *Doubletalk* (London, 1955, p.95).

When the so-called Group of Five issued their *Outline report* on 7 February 1966 devoted to 'the present academic discussion made by the Group of Five in charge of the Cultural Revolution' in China, they wrote — in an effort to protect the intellectual Wu Han and his like: "One must absolutely maintain the principle according to which the search for truth must begin with facts, and also the principle that all men are equal before the truth. People must be persuaded by rational arguments; one should not act like those academic tyrants who decide everything without debate and misuse their authority to crush their opponents. This

ideal must be promoted: to stick resolutely to the truth, always be ready to correct one's mistakes".

Maoist dogma repudiated this liberal notion in the so-called 16 May Circular of 16 May 1966, published a year later, in the *Jen-min jih-pao* (*People's Daily*) dated 17 May 1967: "The authors of the *February Outline* have put forward the slogan 'all men are equal before the truth'. This is a bourgeois slogan. They absolutely deny the fact that truth has a class character; they use this slogan to protect the bourgeois class, to oppose themselves to the proletariat, to Marxism-Leninism and the Thought of Mao Tse-tung. In the struggle between proletariat and bourgeoisie, between Marxist truth and the lies of the bourgeois class and of all oppressive classes, if the east wind does not prevail over the west wind, the west wind will prevail over the east wind, and therefore no equality can exist between them".

If the Church is infallible, then Marxist truth cannot be infallible, and *vice versa*. It seems then that at least one dogma must be fallible, and probably both. If both are fallible, then dogmas of both must be questioned. Then probably all other dogmas should be questioned.

Sources include: Pierre Ryckmans [writing as 'Simon Leys'], *Ombres chinoises* (Paris, 1974), translated as *Chinese shadows* (New York, 1977).

THE DOLPHIN IS A HUMAN FOETAL MONSTER

If you were somewhat surprised to learn that THE YETI AND THE DOLPHIN ARE THE RESULT OF ADAPTATION EXPERIMENTS MADE BY EXTRATERRESTRIAL VISITORS (q.v.), then prepare for another shock.

Marcel Émile Sourbieu's *L'Infernale Mission, ou dans des coulisses du ciel* (Paris, 1976) alleges that artificial insemination experiments were once performed by angels and resulted in the dolphin, a human foetal monster. Unable to evolve differently, the foetus struggled into the water, and became amphibious. Hence, argues M. Sourbieu triumphantly, the almost human faculties of the dolphin, and its potential of evolving towards humanity under certain favourable conditions. Nobody asked the dolphins, but I know at least one human being whom the dolphins would not wish to evolve towards. The assumption, in the 1970's that angels exist or once existed must rank as one of the most tenacious fallacies of all.

THE DRUIDS

We know very little indeed about the ancient Druids, and most of that is wrong. A.L. Owen's useful book *The famous Druids* (Oxford, 1962) is a mine of information on fallacies connected with the Druids.

It has been stated, for example, by no less a person than the founder of Gonville & Caius College, Cambridge, John Caius himself, that Cambridge University was founded by the Druids. Owen also puts us all in his debt by noting the allegation (pp. 35–47) that the ancient Druids wore galoshes. The ancient Druids mentioned by Caesar are not to be confused with the United Ancient Order of Druids, the secret society founded in London in 1781 whose members may indeed have, from time to time, worn galoshes. Readers may like to be warned off Rowland Jones' *The origin of language and nations hieroglyphically . . . defined and fixed* (London, 1764; *A postscript*, London, [1768?]), a work which sets out to show that the Druidical religion was the original religion of all mankind (though the word *Druidai* is regrettably a Greek plural long antecedent to the Old Celtic stem *druid-*, and the word is traceable back as far as Sanskrit); that the Druids had used *English* (though Old English is known to have borrowed the root from the Celtic family); and thus that English was the original language of all mankind.

The whole story is so marvellously consistent. And absolutely wrong in every detail.

A LITTLE DUTCH BOY PUT HIS FINGER IN A DYKE HOLE TO SAVE THE CITY OF HAARLEM

The Dutch have ridiculed since 1873, when the story was apparently first invented by an American, the legend that a brave urchin sacrificed his life to save his native Haarlem from being flooded. He is alleged to have kept his finger in the hole in the dyke wall, though it did not occur to the readers that the amount of water that might trickle through a hole small enough to be stuffed by a little boy's finger might not in fact be quite so lethal, after all. Better, perhaps, if he had simply run to warn the inhabitants of Haarlem.

But the picturesque will usually drive out common sense when the two are in conflict, and the Netherlands Tourist Association has bowed to the weight of error by erecting a bronze statue to the invented lad.

E

“Es ist nichts schrecklicher als eine tätige Unwissenheit”. (There is nothing more terrible than active ignorance) — JOHANN WOLFGANG von GOETHE, *Sprüche in Prosa*, III.

THE EARTH IS GETTING BIGGER

No need to worry about a population explosion: the growing Earth will be able to cope. Or so at least thought Major-General Alfred Wilks Drayson, a well-known Victorian author whose publications included *Sporting scenes amongst the Kaffirs of South Africa* (London, 1858). In *The Earth we inhabit: its past, present, and probable future* (London, 1859), Drayson proves — at least to his own very ample satisfaction — that the Earth is growing larger year by year. The rate he calculated at three-quarters of an inch per mile, annually. The result is that all our telegraph cables will break, and the foundations of our buildings will give way. Luckily for us, and unluckily for the Major-General's theory, our cables have survived intact for more than a century and our houses, offices, factories and bridges are still as safe as ever.

THE EARTH IS THE CENTRE OF THE UNIVERSE

All terrestrial theologies are based on the preconception that a God or gods chose our planet within the solar system for a unique experiment. Explicit or implicit is the view that the Earth is the centre not only of the solar system (which has been known to be false for several centuries) but also of the universe itself.

Apart from its hospitality to animate forms, in which it is almost certainly not unique, the Earth has no special significance in the universe. Einstein showed that the term 'centre' has no absolute validity in space, but for all useful purposes we can say that the centre of our galaxy is 28,000 light years away from Earth. This 'centre' is an extremely compact radio source known to us as Sagittarius A West.

Major explosions must occur there more often than once every 15,000 years and, in the view of the Dutch astronomer Jan Oort, they might even be supernova explosions.

Source: Paul Murdin and David Allen, *Catalogue of the universe* (Cambridge, 1979).

THE EASTER ISLAND SCULPTURES WERE BUILT BY BEINGS FROM OUTER SPACE

Erich von Däniken argues, in *Gods from outer space* (1968), which has been bought and believed by millions of readers over the last decade, that bored visitors from outer space, stranded for some reason on Easter Island, constructed the great statues or *moai* in their own image, using advanced stoneworking techniques. After they left, the more primitive Easter Islanders tried to finish those sculptures which had been left incomplete, but found the job too difficult, and abandoned it. The 'hats' he explains away by a rhetorical question: "Had the islanders seen 'gods with helmets' and remembered the fact when it came to making statues?"

Quite simply, no. A glance at Thor Heyerdahl's book on Easter Island for the general reader, *Aku Aku* (London, 1958), would have shown him that the 'hats' were not 'helmets' or even hats: they are known to be *pukao*, the type of male coiffure customary on Easter Island at the time when they were carved. The last statues were known to have been carved about 1680 A.D., when a civil war interrupted all work in the quarries. That is the date and such the cause of the abandonment of certain statues. As for the allegedly advanced stoneworking techniques, the mayor of Easter Island and six other men carved out the contours of a new statue in three days using the traditional tools, with Heyerdahl as an eye-witness!

Thor Heyerdahl specifically ridiculed the fantasies of von Däniken's explanation in a letter published by Ronald Story which includes the following lines: "If civilized beings had come from outer space to Easter Island, or to ancient Peru or Egypt for that matter, they, like our moon travellers, would need space-ships and accessories of such incredible durability that they could resist the immense heat of friction when descending through our atmosphere. Why, then, the intelligent layman should ask himself, is no fragment of such

metal, plastic, or other fabric of the sort ever found where the ancient spacemen supposedly landed and worked, but only stone and bone tools good enough to do the job but not brought from other planets? We the scientists are to be blamed for not speaking up, the uninformed laymen are to be blamed for not using their own common sense, and commercial writers like von Däniken are to be blamed for not telling their readers that they are selling them entertaining fiction and not popular-science books”.

Sources include: Ronald Story, *The space-gods revealed* (New York and London, 1976).

ECOLOGICAL AND CULTURAL FALLACIES OF THE WESTERN WORLD

The Educational Policy Research Center of Stanford Research Institute worked out eleven major alternative branches for the future of the West in the year 2000, based on the choices open to the policy-makers. These are: collapse; theocracy of the Orwellian ‘1984’ variety; authoritarian recession; pollution stalemate; welfare stultification; garrison state; philistine comfort; socialist success; satisfied plenty; exuberant democracy; and manifest destiny.

Willis Harman, Director of the Center, indicated that the following nine widely-held fallacies, embedded deeply in Western culture, must be rejected, and that education towards eradicating them “is the paramount educational task for the [American] nation and the world”.

1. Pride in family, power in nationhood, and survival of the human species as a whole, are to be furthered (as in the past) by population increase.

No: the number of children in each family should be one or, at the most, two.

2. Any technology that can be developed and any knowledge that can be applied, should be so developed or applied.

No: before developing any new technology or system, subject it to the test of whether it will harm or benefit the ecosystem.

3. The sum of the knowledge of all the experts constitutes wisdom.

No: knowledge in itself cannot constitute wisdom. Wisdom includes the right understanding and application of such knowledge.

4. The reductionist (mechanical or impersonal) view of man which has been derived from a certain view of modern science requires the dehumanizing of ways of thinking about and treating man.

No: the future of the Earth must be seen as a product of cooperation and self-discipline.

5. Men are intrinsically separate, so that nobody should feel responsible for people in distant lands or for future generations.

No: everyone must be ultimately responsible for everyone else both now and in the future.

6. Nature is to be exploited: one does not cooperate with it.

No: the destruction of Nature implies the eventual destruction of man.

7. 'Economic Man' needs ever-greater consumption, an ever-increasing Gross National Product, and the expenditure of irreplaceable resources.

No: it is vital to maintain a balance between what is consumed and what is produced.

8. The future of the planet can safely be left to nation-states acting independently.

No: a consensus, based possibly on the present United Nations system, should act as a mechanism for improving co-operation between countries.

9. 'What ought to be' is a meaningless concept and thus is not achievable.

No: society should reach consensus on broadly acceptable and attainable goals beyond the political/religious/nationalistic levels, and work towards these goals.

THE ECTENIC FORCE

In *Science vs. modern spiritualism: a treatise on turning tables, the supernatural in general, and spirits* (2 vols., New York, 1857), Count Agénor Étienne de Gasparin postulated a physical force emanating from the person of a medium. This 'ectenec' force was directed by the medium's will, and could move objects without contact in defiance of natural laws.

Lewis Spence observes of the 'ectenec' force, in *An encyclopaedia of occultism* (New York, 1960): "If it be true that tables were moved without contact, then such a theory is indeed necessary, but the evidence for this type of phenomena is not abundant". See also **SPIRIT-RAPPING**.

Those who still believe in the validity of spiritualism should examine the career of the 'medium' William Roy. Most fraudulent 'mediums' never confess, even if they are found out by an investigator but, after making a laughing-stock of the general public and even specialists. Roy confessed in 1958 and explained how his fraud had been perpetrated. His methods had been as varied as they were ingenious, and included the use of electronic equipment and espionage techniques, as well as the exchange of information with other 'mediums'. In more than a century of psychical research since the great occult boom of the 19th century, nobody has yet produced a single experimental proof of the validity of spiritualism: the only difference between a 'medium' and a stage entertainer seems to be the greater intellectual honesty of the latter.

Sources include: Simeon Edmunds, *Spiritualism: a critical survey* (London, 1966).

EGYPTOLOGICAL AND PYRAMIDOLOGICAL THEORIES

In addition to the many fallacies on aspects of Egypt and the Pyramids discussed in volume 1, I am asked by Mr L. H. Weiss of Geneva to mention Adam Rutherford and R. A. Schwaller de Lubicz, since their books are in print and widely read.

Adam Rutherford's works, published by the Institute of Pyramidology of Harpenden (Herts.), currently run by J. Rutherford (trading as Top Stone Books), include the following four, as described by the publishers:

"Book I: *Elements of Pyramidology, revealing the Divine Plan for our Planet*. This compact work elucidates the meaning of every passage in the Great Pyramid and deals in a most logical way with the chronological system from the earliest times right down to the consummation of the Divine Plan in the future.

Book II: *The Glory of Christ as revealed by the Great Pyramid*. All down the ages mankind has sought for a panacea for the world's ills. The Great Pyramid solves the problems and reveals that the only power adequate to put the world right — completely right — is the power of the resurrected Christ who will yet bring it to pass.

Book III: *Co-ordination of the Great Pyramid's*

Chronograph, Bible Chronology, and Archaeology. This volume deals with the entire range of Old Testament chronology and the co-ordination of the Great Pyramid's chronograph, Bible chronology and archaeology. It also discusses every nook and corner in the vast structure of the Great Pyramid and contains photographs of the interior.

Book IV: *The History of the Great Pyramid.* This book gives the most comprehensive History of the Great Pyramid ever written. It is divided into two sections. Part I deals with the history of the monument itself, whilst Part II gives the history of Pyramidology”.

If you can't afford the £31 (plus postage) for the Rutherford volumes, Top Stone Books offer a 96-page book by E. R. Capt, *The Great Pyramid decoded*, on what they call ‘the most mysterious building in the world’. But there is nothing whatsoever mysterious about the Pyramid of Cheops, known by reason of its size as the Great Pyramid or about any of the other eighty or so Pyramids scattered about the Nile Valley.

For a hundred years it has been known by excavation and by hieroglyphic inscriptions to have been the tomb of the Pharaoh Khufu (*Gk.* Cheops), but the successful decipherment of hieroglyphics and sophisticated archaeological techniques have not prevented Peter Kolosimo and many hundreds of others from foisting their opinions to the contrary on the gullible public. Kolosimo claims some mystic significance for his hypotheses that “the distance of the Cheops Pyramid from the centre of the world is the same as its distance from the North Pole”, that “the Great Pyramid meridian passes through more land than any other meridian”, and that “the height of the Great Pyramid is in direct relationship with the distance of our planet from the sun”. (see Kolosimo's *Not of this world*, London, 1970, p. 240). As for the first point, the same is true — surely it goes without saying — for all other monuments on the same latitude; as for the second point, more land seems to pass through other meridians (though it seems a matter of dubious significance); and as for the third, the reader will point out as gently as he sees fit that the height of the Great Pyramid is in ‘direct relationship’ with the height of most other things, in the same way that the number 64 is in ‘direct relationship’ with the numbers 1, 2, 4, 8, 16, and 32, not to mention 128 and 256.

We must not leave out of account the dangerous pseudo-

Egyptology of R. A. Schwaller de Lubicz, revived in 1978 by J. A. West in an abridged interpretation as *Serpent in the sky*. The London publishers write: "There exists a revolutionary, exhaustively-documented reinterpretation of the civilization of ancient Egypt. It proves that all that is accepted as dogma concerning Egypt (and ancient civilization in general) is wrong or inadequate. Despite the documentation and the carefully marshalled evidence, this radical work is deliberately ignored by orthodox Egyptologists.

Serpent in the sky is a brilliant presentation of the Egyptological work of the late R. A. Schwaller de Lubicz, and an examination of its validity and importance — an importance that necessitates a drastic revision of the way modern man looks at the past (and therefore at the present).

De Lubicz's work may well have been the most important single work of scholarship of the century [we still quote the publishers!] and *Serpent in the sky* makes this prodigious work accessible to the general reader for the first time! In his preface, Peter Tompkins writes: "In his daring defence of Lubicz, West battles for a wisdom kept alive through centuries, despite doctors, priests and undertakers who wished to dissect it into carrion".

This steamy rhetoric, so common in crank literature, conceals the fact that no Egyptologist can take Schwaller de Lubicz seriously for perfectly legitimate scientific reasons. Such works as *Le Temple de l'Homme*, *Apet du Sud*, *à Louqsor* (3 vols., Paris, 1957) and *Le roi de la théocratie pharaonique* (Paris, 1961) contradict the accumulated knowledge of the decades by serious qualified archaeologists only too ready to modify their picture of the past on the presentation of carefully-documented proof.

Another pyramidological curiosity is G. R. Riffert's *The Great Pyramid* (5th ed., London, 1935), which claims to the author's satisfaction, if to nobody else's, that the existence of the Great Pyramid is a proof of the existence of God. [But surely therefore a god of the *Egyptian* pantheon, rather than a Judeo-Hellenistic one?]

Winifred Needler has contributed to the world's store of common sense on pyramidology in *Popular Archaeology* (October 1972) by observing that "a formula constructed with sufficient complexity may fit a given phenomenon and yet prove nothing". This statement was made *à propos* of Peter

Tompkins' book *Secrets of the Great Pyramid* (London, 1971), yet another of the yearly crop of theories which 'explain' aspects of the Pyramids as if orthodox archaeology had some mad reason for suppressing the true nature of Egyptian funerary architecture in its historical development.

ELECTRIC HOMOEOPATHY

For the story so far, see **HOMEOPATHY** in volume 1.

Less than a century ago, the name of Count Cesare Mattei was celebrated in the field of European medicine. The journalist W. T. Stead tirelessly promoted Mattei's activities, as did Commissioner Booth-Tucker of the Salvation Army, and Lady Paget, in an organ as reputable as the *National Review*. Mattei was praised by all but orthodox doctors for his new methods, which he claimed were a direct advance on the homoeopathic remedies of S. C. F. Hahnemann.

Mattei clinics were established in France and Britain. His *Nouveau guide pratique de l'électro-homéopathie* (Nice, 1881) was followed by the equally influential *Médecine électro-homéopathique* (Nice, 1883), which I have read with growing incomprehension. The book purports to be a kind of user's manual to a series of herbal concoctions. Much of it is in the form of a dictionary of ailments, each of which (from infertility to bronchitis) can be cured by the internal or external application of a combination of remedies. There are 31 from which to permutate, five liquids (*liquides électriques*) and 26 in the form of pills.

"Par mon système électro-homéopathique", explains the Count, "j'ai donc voulu mettre le sang et la lymphe malades à même d'attirer à eux la substance la plus convenable à leur guérison et de délivrer chaque organe spécial des causes hostiles qui s'opposent au libre exercice de ses fonctions, sans lui faire violence par des remèdes impropres à sa guérison".

If this seems unclear — a concoction of phrases as valueless as the 'remedies' themselves — then try to make head or tail of the internal treatment for cancer. "Le premier mois, deuxième dilution A. alt. C. (essayer la première dès qu'on peut la supporter) A. le matin et C. dans l'après-midi. D'heure en heure un globule de C. à sec sur la langue; 5 globules C. dans le vin de chaque repas. Si le malade se plaint de mauvaises digestions, de faiblesse, on donnera S. 5 globules à sec au réveil et deux ou trois après chaque repas. Après le

premier mois, si le C. produit peu d'effet, essayer le C⁵ alt. A², un globule de C⁵ toutes les heures, 10 globules C. dans le vin de repas". Mattei obviously knew no teetotallers, just hypochondriacs. And if you are wondering about the initials A, C, S, and their 'alternatives', it will not make you much wiser to know that A stands for 'antiangiôtique', C for 'anticancéreux', and S for 'antiscrofuleux'.

The pages at the end of Mattei's manual are crammed with lists of successful treatments, just like advertisements in the crank naturopathy magazines today. Thus, Signora Gualdi, a Roman, was said to have been cured of breast cancer (4 April 1869- 6 June 1870); one Signora Zoboli was cured of cancer of the uterus by C pills; and the Bolognese Signora Bagnoli was also cured of cancer of the uterus.

Mattei's 'treatments' were eventually proved worthless. The herbal remedies were discarded, and the all-purpose 'electricity' silently vanished from much of the homoeopathic literature. "We no longer believe", as J. A. C. Brown observes in the *Pears medical encyclopaedia* (London, 1965), "that electricity has some magic effect upon neurasthenia or insomnia, nor is it usually accepted that electric shocks applied to a paralysed nerve speed its recovery — although it may prevent the muscles supplied by the nerve from wasting while healing is taking place spontaneously".

LOVETT AND ELECTRICAL PHILOSOPHY

Richard Lovett (1692-1780), a well-known Worcester fraud, advertised in 1758 that he could effect marvellous cures (of sore throats, for instance) by means of electricity.

His *Electrical philosopher: containing a new system of physics founded upon the principle of an universal plenum of elementary fire* (Worcester, 1774) used the concept of electricity without deducing any single phenomenon from our knowledge of electrical principles. His works show an ignorance of electricity remarkable even in a lay clerk of Worcester Cathedral during the 18th century.

Source: Augustus de Morgan, *A budget of paradoxes* (2nd ed., Chicago, 1915).

ELEPHANTS LIVE TO AN AGE OF 100 YEARS OR MORE

It has been reported at second hand, even by some biologists,

that elephants are frequently longer-lived than men, though the longest-lived human being reliably known is the 113-year-old Delina Filkins (New York), born in 1815 and deceased in 1928.

By contrast, the oldest known elephant, Kyaw Thee (Burma) died at 70 in 1965, though Modoc (died in 1975 at Irvine, California) *may* have been as old as the 78 years claimed at death.

ELEPHANTS NEVER FORGET, CAN SPEAK, AND CAN WRITE

Who has not heard the incredible stories of elephants who recall an injury and, many years later, recognise their tormentor and play havoc with him? The fact is that we honestly do not know how long an elephant can remember, but Frank Buck, in *Animals are like that!* (London, 1941) is only one of a long line of zoologists to reject, on balance, the old wives' tale.

Elephants are not now widely believed to be able to speak and write, but Sir Thomas Browne was not convinced, writing in his *Pseudodoxia epidemica* (London, 1646): "That some Elephants have not only written whole sentences, as Aelian ocularly testifieth, but have also spoken, as Oppianus delivereth, and Christophorus a Costa particularly relateth, although it sound like that of Achilles horse in Homer, wee doe not conceive impossible".

Sir Thomas does dispose of two other elephant fallacies, however. "There generally passeth an opinion it hath no joynts; and this absurdity is seconded with another, that being unable to lye downe, it sleepeth against a tree, which the Hunters observing doe saw almost asunder; whereon the beast relying, by the fall of the tree falls also down it selfe, and is able to rise no more; which conceit is not the daughter of latter times, but an old and gray-headed error, even in the dayes of Aristotle, as he delivereth in his booke, *de incessu animalium*, and stands successively related by severall other Authors, by Diodorus Siculus, Strabo, Ambrose, Cassiodore, Solinus, and many more: Now herein me thinks men much forget themselves, not well considering the absurditie of such assertions".

Absurd assertions do not stop there: do you remember the one about the common graveyard to which all elephants go when they are sick unto death, or perhaps at death's door. It is

a forest of tusks — the dream of the ivory poacher and of the Hollywood producer, such as Bernard H. Hyman in *Tarzan and his mate* (1934). Dead elephants are not often found early enough after death to be still recognisable as such (few corpses lie long before the scavengers move in), but their bones do survive for at least twenty years in Kenya's Tsavo National Park, according to Malcolm Coe, of the University of Oxford Animal Ecology Research Group, who recently reported on the decomposition of elephant carcasses in the *Journal of Arid Environments*, volume 1.

Another strange idea about elephants concerns the docility of the Asiatic elephants (shown in schoolbooks transporting logs) as opposed to the fierce African elephants. But archaeological and literary evidence coincide in proving that African elephants were easily tamed by Romans, Carthaginians, and Africans alike.

PREDICTING THE FUTURE FOR PRINCESS ELIZABETH

Thanks to EP Publishing Ltd. of East Ardsley, Yorkshire, back into print, in one handy volume, come *Old Moore's Almanack* issues for 1701, 1801, 1901 & 1930 (1973). The jacket displays 'Startling Prophecies for 1930', featuring 'Princess Elizabeth's Destiny' ("Certified sales exceed 2,400,000").

Unfortunately, though we learn that the little Princess (aged 3 at the time of publication) would suffer ill-health at 14, contract an alliance at 17, and experience a change of venue at 20, Old Moore's prognostications do not suggest that the Princess might one day become Queen Elizabeth II!

But then, the 1901 almanack was still claiming to assist women on matters such as 'How to choose a husband by the colour of the hair'.

FOREIGN EMBASSIES ARE 'ON FOREIGN SOIL'

It is popular wisdom that embassies and consulates are, in effect, part of their own national territory. British police, for example, never enter an embassy in London without the ambassador's prior permission. Similarly, Russian police have tried to prevent would-be defectors from entering the British Embassy in Moscow, but have never crossed the threshold in pursuit. The Vienna Convention of 1961, which

set the present code of practice on diplomatic immunity, says that diplomatic premises are inviolable, and the host state has a 'special duty' to protect them. But the ruling is unclear on people held against their will, or seeking political asylum in an embassy, as in the famous case of Cardinal Mindszenty, who lived for years in the American Embassy in Budapest.

But foreign embassies in Britain are on English soil, not foreign, according to a ruling of Mr. Justice Cumming-Bruce in the High Court on 11 May 1972. The matter arose in a case involving the attempt to validate a Talak divorce obtained by a husband in a ceremony at the United Arab Republic (now the Arab Republic of Egypt) Consulate. Mr Justice Cumming-Bruce ruled against the Egyptian-born Mr Jan Pierre Radwan, who had claimed that his Talak divorce (in which he said of his wife "I divorce thee" thrice) was valid in English law.

Mr Justice Cumming-Bruce was "satisfied that the term 'extra territoriality' has been used to describe, in a compendium phrase, that bundle of immunities and privileges which are accorded by receiving States to envoys sent by foreign States.

The building occupied by a foreign embassy and the land upon which it stands are part of the territory of the receiving State and are therefore under the jurisdiction of the receiving State though members occupying it are primarily under the jurisdiction of the Sending State".

Regarding marriages in embassies, the judge stated that an ambassador was entitled to perform them only if the law of the country in which they were situated permitted them.

Source: *Daily Telegraph*, 12 May 1972.

EVOLUTION BY THE EARTH'S ROTATION

Arabella Kenealy is perhaps best remembered, if at all, for her book *The human gyroscope: a consideration of the gyroscopic rotation of Earth as mechanism of the evolution of terrestrial living forms. Explaining the phenomena of sex: its origin and development and its significance in the evolutionary process* (1934).

The title gives a picture of the book clearer than the book gives of the title. Pseudo-science, evolution, and sex: all that is missing is the allegedly divine origin of the monarchy and we should have the set.

**THERE IS AN ULTIMATE EXPLANATION
OF EVERYTHING**

Jacob Bronowski said in July 1973: "One aim of the physical sciences has been to give an exact picture of the material world. One achievement of physics in the 20th century has been to prove that this is impossible . . . There is no absolute knowledge. And those who claim it, whether they are scientists or dogmatists, open the door to tragedy".

Alan McGlashan's exhilarating, witty examination of intellectual errors, *Gravity and levity* (London, 1976), comes to the same conclusion. The more we learn, the less we can be sure of absolute explanations of even the simplest scientific or religious statement. "This tireless quest for the Ultimate Explanation", observes McGlashan, "time after time proved mistaken, survives every exposure, springing up in new forms with each generation of men". One of his examples is taken from contemporary French thought. "Even today, when leading scientists and thinkers are at last beginning to catch sight of the paradoxical nature of reality, there is this flourishing French school of structural philosophy, headed by such distinguished figures as Lévi-Strauss, Foucault, and Lacan, which carries the quest for a single and final explanation of everything to a point which approaches the psychotic. Structuralism claims to have already revealed 'the few primary hidden codes' that determine all human thought and behaviour, and is now seeking the master-code behind all codes, 'the system', to use Foucault's words, 'underlying all systems' ". Such arrogant claims recall those of Nietzsche and Freud in earlier generations.

Freud is recorded to have made this outburst to Carl Gustav Jung: "Promise me never to abandon the sexual theory. That is the most essential thing of all. You see, we must make a dogma of it, an unshakeable bulwark". With Jung we must ask: "A bulwark against what?"

While each of us has the potential to extend knowledge and understanding beyond those of the last generation, we must equally accept with perfect humility the potential of the next generation to understand and know more than we do ourselves. There is a dreadful warning in the statement made by the French chemist Berthelot in 1887: "From now on there is no mystery about the Universe".

F

“For ‘ignorance is the mother of devotion’, as all the world knows”.—ROBERT BURTON, *The Anatomy of melancholy*.

FABRE D’OLIVET AND THE SEQUENCE OF RACES

There is not much to recommend Antoine Fabre d’Olivet’s treatise *La langue hébraïque restituée et le véritable sens des mots hébreux rétabli et prouvé par leur analyse radicale* (2 vols., Paris, 1815–6), translated by N.L. Redfield as *The Hebraic tongue restored* (London, 1921).

But at least it does not pretend to cover twelve thousand years of human history, unlike his *Histoire philosophique du genre humain* (1824), one of the main sources of Blavatsky’s theosophical *Secret doctrine*. The earlier book claimed merely that Moses was an initiate into the Mysteries of Memphis. The later offers a fantastic theory that the races of man have *succeeded* each other! True, comparative anthropology was hardly conceived of at that time, but any slight acquaintance with prehistory, history, geography, or society should have robbed him of the central misconceptions which render his book a morbid curiosity.

Fabre d’Olivet teaches that the Earth was initially ruled by a red race, most of which perished at the fall of Atlantis. Next came a black race. Finally, a white race appeared near the North Pole (hence the colour?) and found a leader in the semi-divine Druid called Ram, whose powers included a cure for elephantiasis. Ram’s theocratic empire ruled until 2,000 B.C.

Theosophists still believe a selection of the above ideas, but they should be warned, kindly, that Fabre d’Olivet forged the poems of a ‘newly-discovered’ troubadour and was a self-confessed charlatan.

Sources include: Léon Cellier, *Fabre d’Olivet* (Paris, 1953).

THERE IS NO CONNECTION BETWEEN OCCULTISM AND FANATICISM

A major study by T.W. Adorno and others, *The authoritarian personality* (New York, 1950), demonstrates that there is a strong connection between those individuals prone to occult beliefs and those prone to such ideological fanaticism as excessive patriotism, racism, and fascism. Holders of extreme authoritarian views tend to believe in all of the five following fallacies:

1. Science has its place, but there are many important things that can never be understood by the human mind.
2. Everyone should have complete faith in some supernatural power whose decisions he obeys without question.
3. Some people are born with an urge to jump from high places.
4. Some day it will be shown that astrology can explain a lot of things.
5. Wars and social troubles may some day be ended by an earthquake or flood that will destroy the world.

THE FAUST STORY IN EUROPEAN LITERATURE IS BASED ON LEGEND

An absurd concoction of implausible tales on a figure called Johann Faust was published under the title of *Historia von D. Joh. Fausten* (Frankfurt, 1575) by the printer Johann Spiess. The sensational booklet, containing a direful warning against theological heresies, among them necromancy, was reprinted, translated, and rewritten for popular consumption all over Europe in succeeding centuries, until Christopher Marlowe created the *Tragicall history of Dr Faustus* in 1588–9 (entered in the Stationers' Register in 1604 but apparently not published in 1604).

From England the tragedy returned to Germany, where Gotthold Ephraim Lessing made the heretic into an altruistic lover of knowledge who deserved salvation in fragments of a play, *Faust* (1759). It was left to the great Goethe to produce the most lasting works on the story of Faust (complete edition, 1834), which completely transform the medieval story. Faust is saved in Goethe's epic drama. Other treatments of the story include the operas *Faust* by Gounod and *Mefistofele* by Boïto, Paul Valéry's *Mon Faust*, and Thomas Mann's *Doctor Faustus*.

Johann Faust was, however, a real man — a travelling magician and mountebank who lived in Germany from the 1480s to about 1540. He is mentioned by Trithemius (b. 1462) in a letter dated 1507, and by several other contemporaries, including the demonologist Wierus, who states that Faustus was a drunkard who had studied magic at Cracow and was eventually strangled by Satan after his house had been shaken by a tremendous din.

Sources include: H.G. Meek, *Johann Faust* (1930); and Lewis Spence, *An encyclopaedia of occultism* (New York, 1960).

FERMAT'S PROBLEM HAS BEEN SOLVED

The question in a vague or approximate form known to Babylonia as early as 2000 B.C. or thereabouts, and stated in its present form by Pierre Fermat (1601–65) is as follows:

Prove or disprove that, if n be a number greater than 2, there are no whole numbers such that $a^n + b^n = c^n$.

In 1909, the German mathematician P. Wolfskel offered a substantial prize of 100,000 marks for a published solution to Fermat's problem, but thousands of erroneous proofs were submitted without a single real solution. The mathematician E. Landau reached the stage where he had postcards printed to read 'Dear Sir or Madam: Your proof of Fermat's Last Theorem has been received. The first mistake is on page . . . , line . . .' He gave his graduate students supplies of these cards to complete and return to those who sent in erroneous solutions. We are no nearer the answer than we were when Fermat first posed the problem.

Source: Eric Temple Bell, *The last problem* (New York, 1961).

STRONG ALE FOR FERTILITY

Eighteenth-century England was a haven for quacks of all descriptions, as *The Compleat Housewife* (London, 1753) comprehensively proves. A 'Mixture to Promote Breeding' from this household manual consisted of three pints of strong ale in which the childless wife boiled three 'ox-backs' (the spinal marrow of the ox), catmint and other herbs, stoned

raisins, dates, nutmegs 'prick'd full of holes' and 'the syrup of stinking orris'. To ensure fertility, the mixture was to be imbibed each night, out of the husband's sight.

There is no recorded instance of the mixture having achieved the desired result, and no published refutation known before the one you are reading now.

IDENTIFICATION BY FINGER-PRINTS

In the *Medical bibliography* (London, 1970), ed. by L.T. Morton, it is stated that it was J.E. Purkinje who first suggested the use of finger-prints for identification purposes in a paper contributed to the Transactions of the University of Breslau. However, Purkinje drew attention only to the patterns discernible on finger-prints. The first published suggestion that prints should be used for identification seems to have occurred in a letter from Sir Henry Faulds to *Nature*, 28 October 1880, 'On the skin-furrows of the hand'. W. J. Herschel, in *Nature*, 25 November 1880, claimed that he had used the system on contracts in India as early as 1858.

Sources include: Francis Galton, *Finger prints* (London, 1892).

FISHES DRINK

The popular saying, sometimes uttered in admiration and sometimes in scorn, "he/she drinks like a fish", relies on the fallacy that fishes drink. It may look as though water passes to their stomach when you see their mouths open, but actually their gullets are very tightly constricted, and hardly any water gets as far as the stomach.

THE GENITALS OF MALE AND FEMALE FLEAS ARE IDENTICAL

This idea was at one time so prevalent, though considered amusing, that Roland Young even immortalised the 'fact' in a quatrain which many readers may recall:

And here's the happy bounding flea—
You can't tell the he from she.
The sexes look alike, you see;
But she can tell, and so can he.

Unhappily for the the anecdote, it cannot survive reference

to the standard work, *Fleas, flukes and cuckoos: a study of bird parasites* (London, 1953) by Miriam Rothschild and Theresa Clay. Even without a hand lens, say our authorities, it is easy to tell the sexes apart, and the external sexual organs have been so closely studied that they constitute the primary means of identification of different species.

WILHELM FLIESS AND THE NUMBERS 23 AND 28

In his monumental biography *Sigmund Freud: life and work* (3 vols., London, 1953–7), Ernest Jones devotes chapter 14 of volume 1 to ‘The Fliess Period (1887–1902)’, a time during which Freud enjoyed a ‘really passionate relationship of dependence’ on Wilhelm Fliess, a man whom Jones describes as ‘intellectually his inferior’. Fliess and Freud exchanged hundreds of letters, but Freud destroyed those he had received and we know the correspondence only from the 284 written by Freud, and sold by Fliess’s widow to a Berlin bookseller.

In 1897 Fliess published *Die Beziehungen zwischen Nase und weibliche Geschlechtsorganen in ihrer biologischen Bedeutungen dargestellt* (‘The relationships between the nose and the female sex organs from the biological viewpoint’).

Fliess argued that neuroses and sexual problems could be treated by applying cocaine to alleged ‘genital spots’ inside the nose. He stated that cases had occurred in which miscarriages were produced by anaesthetising the nose, and special treatment of the nose could help menstrual pains. He operated on Freud’s nose on two different occasions.

Furthermore, Fliess considered the numbers 23 and 28 the key to sexuality (and to much else). The normal male has a cycle of 23 days, and the normal female has a cycle of 28 days. If a patient asked in all humility why he or she did not experience such a cycle (not to be confused with the menstrual cycle, though the two are related by evolutionary origin), then Fliess would simply point out that one was not a normal male or female! This was easy for him to say, because he considered *everybody* to be really bisexual. The cycles of 23 or 28 days respectively continue throughout life, and even determine one’s date of death! Freud endorsed all of Fliess’s early work, and at one time suspected that sexual pleasure was a release of 23-day energy, and sexual apathy a release of 28-day energy. Freud expected to die at the age of 51, because it was the sum of 23 and 28, and besides, Fliess had told him that the year

would be critical. In fact, Freud lived from 1856 to 1939, so he lived to be 83. If he had managed to survive until 6 May 1940, he would have been 84, which would have been three times 28, but numerology ignores the near misses. As Ernest Jones writes: "There is much obscure evidence indicating some periodicity in life — the most obvious being the fluctuations in sexual desire — but the difficulty has always been to discover any regularity in it. Needless to say, Fliess was mistaken in thinking he had solved the problem. The mystical features in his writing, and the fantastic arbitrariness with which he juggled with numbers — he was a numerologist *par excellence* — have led later critics to consign most of his work to the realm of psychopathology".

Of few books could this sweeping statement be made with more feeling than of Fliess's 584-page tome *Der Ablauf des Lebens: Grundlegung zur Exakten Biologie* ('The rhythm of life: foundations of exact biology', Leipzig, 1906; 2nd ed., Vienna, 1923) which has been described with candour by Martin Gardner as "a masterpiece of Teutonic crackpottery. Fliess's basic formula can be written $23x + 28y$, where x and y are positive or negative integers".

Freud was convinced — for a time — but he also admitted that he was deficient in any mathematical skill. Fliess knew a little arithmetic, but that is all. He did not understand, to the end of his life, that if any two positive integers without a common divisor are substituted for the 23 and 28 in his basic formula, it is possible to express any positive integer. Roland Sprague has shown, in a recent puzzle book, that even if the negative values of x and y are excluded, it is *still* possible to express all positive integers greater than a certain integer. The work of Fliess has been definitively demolished by J. Aelby, but the cult is still alive today, for 'biorhythms' were also postulated by a professor of psychology at the University of Vienna, Hermann Swoboda (1873–1963). His 576-page volume *Das Siebenjahr* ('The year of seven', 1917), contains useless mathematical analyses of the alleged rhythmical repetition of births through generations. Swoboda designed a slide-rule to determine the so-called 'critical' days of biological rhythms which is as meaningful as belomancy (q.v.).

Neither doctors nor mathematicians can see any worth in the theory of biorhythms, but that does not stop the books

pouring from the presses: *Biorhythm* (New York, 1961) by Hans J. Wernli; *Is this your day?* (New York, 1973) by George S. Thommen; *Body time: physiological rhythms and social stress* (London, 1974) by Gay Gaer Luce; *Biorhythms and human reproduction* (New York, 1974) by Ed Ferin; and *Biorhythms: a personal science* (London, 1976) by Bernard Gittelson. The Fliess and Swoboda notions have reached an enthusiastic audience in Japan, following the publication of *Biorhythms for health design* by Kichinousuke Tatai.

In *The encyclopaedia of reality* (London, 1979), Katinka Matson compounds the fallacy. "It has been determined", she asserts without justification, "that there are three different kinds of biorhythms: physical rhythm [23-day cycle]; sensitivity rhythm [28-day cycle]; and intellectual rhythm". The last, according to Katinka Matson, is a 33-day cycle discovered by Alfred Teltscher in Switzerland during the 1920s as a result of his work with students in high school and college. The unsubstantiated theory is that during the first 16½ days of this cycle you think clearly and creatively, while in the second period of 16½ days you think less clearly and less creatively. Since nobody can prove this one way or the other, however, the theory is valueless. So is the so-called 'Circadian rhythm' connected with physical changes by day and night. Katinka Matson alleges — but without any proof — that the behaviour of circadian rhythms can be measured in man by checking protein metabolism, urine flow, body temperature, and sensory changes. Reactions to stress, pain, drugs, and disease "are partially determined by circadian rhythms". Or then again, perhaps not.

JOSÉ DE ACOSTA, THE BIBLICAL FLOOD, AND THE FOXES OF PERU

In volume 1, an entry on the **FLOOD** dealt with the Biblical fallacy that the whole Earth was covered in a single deluge at one time, though there are proofs of many widespread and devastating floods at many periods in earth history, such as the recent disaster in Bangla Desh.

Another major Biblical fallacy concerns the idea that 2 members of each animal species were saved when the Flood subsided. St Augustine was aware of the problem in *De civitate Dei* as early as the fifth century, long before the discovery of thousands of new species was recorded by

travellers such as Vasco da Gama, Magalhães, Columbus, and Vespucci. "There is a question", wrote Augustine in consternation, "about all these kinds of beasts, which are neither tamed by man, nor spring from the earth like frogs, such as wolves and others of that sort, . . . as to how they could find their way to the islands after that flood which destroyed every living thing not preserved in the Ark . . . Some, indeed, might be thought to reach islands by swimming, in case these were very near; but some islands are so remote from continental lands that it does not seem possible that any creature could reach them by swimming". Augustine deduces, therefore, that the other animals were either captured by men and taken to new lands for the pleasure of hunting them, or carried by angels, commanded or permitted to perform this operation by God".

By the sixteenth century, the vast number of new animals identified in the New World, for example, made even fundamentalists think again. José de Acosta (1539–1600), a Spanish Jesuit who spent the years from 1571 to 1587 in Peru, ridiculed Augustine's proffered explanations. His excellent *Historia natural y moral de las Indias* (1590) was translated into English by E. Grimstone (London, 1604). "Who can imagine", he asks rhetorically, "that in so long a voyage men woulde take the paines to carrie Foxes to Peru, especially that kinde they call 'Acias', which is the filthiest I have seene? Who woulde likewise say that they have carried Tygers and Lyons? Truly it were a thing worthy the laughing at to thinke so. It was sufficient, yea, very much, for men driven against their willes by tempest, in so long and unknowne a voyage, to escape with their owne lives, without busying themselves to carrie Woolves and Foxes, and to nourish them at sea".

Yet three and a half centuries later there exist millions of Christians who express total and utter surrender to fundamentalist belief in every word of the Bible! See also **JEHOVAH'S WITNESSES**.

FLORITHERAPY

Flowers are the 'quintessence of nature', according to Edward Bach in *Heal thyself* (London, 1931). From this meaningless aphorism, Bach drew the fallacious conclusion that it is possible to work out a system relating flowers to human

moods, unwilling to recognise the fact that every human being is an individual.

Furthermore, according to Bach, there is practically no disease that cannot be cured by flowers and no mood that cannot be evoked by them. He is thus not only a bad logician but also a quack doctor.

Here in alphabetical order are some of the flowers recommended by Edward Bach, together with the properties that he assigns to them. There have been, and still are, other floritherapists, but there is no full agreement as to the flower required to treat ailments or to evoke moods. According to Bach, anemones provoke small worries, the azalea induces fickleness, clematis inspires courage, the cornflower produces staidness and sobriety, dandelions (and marigolds) provoke jealousy, the hyacinth suspicion, the iris indifference, the lilac trouble, and the pansy flightiness. The petunia arouses anger, the sunflower aids falseness, and the sweet pea inspires conservative attitudes, so beware of the trade unionist who specialises in sweet peas, petunias and sunflowers.

Madeleine Kingsley's hilarious article on Mrs Kaye McInnes, making 'Exultation of Flowers' in the Scottish Highlands, appeared in *Radio Times*, 30 July—5 August 1977. Since the death of her husband in 1975 Mrs McInnes has been the sole distiller, packager and supplier of the '100 per cent water without herbal or chemical ingredients' to 28,000 customers 'from Israel to Alaska'. Not only does Mrs McInnes attempt to coax from plants in her garden 'electrical impulses in stable suspension', but she sells them *in water* at 'a price that just keeps the operation ticking over'. Her claim is that "at least 38 different flower radiations' concentrates go into each bottle: sunflowers, periwinkle, white clover, potentilla, Star of Bethlehem . . . Every creature on earth, you see, gives out its own unique cosmic radiations, invisible wavelengths if you like".

Elizabeth Bellhouse, a Somerset lady, produces a healing water and ointment of a type similar to that of Mrs McInnes. Her 'Vita Florum' is alleged to heal all ills, from lassitude in canaries to gangrene in human beings and, in her words, "takes precedence over all the presently known and acknowledged laws of chemistry, physics and biology". Unlike Mrs McInnes, Miss Bellhouse does not glean her ingredients from her own garden, but travels around Europe under 'the

divine guidance of the Virgin Mary', with whom she is apparently in quite frequent touch. *See also* **AROMATHERAPY**.

THERE IS STATISTICAL PROOF FOR FLYING SAUCERS

There are hundreds of thousands of reports of Unidentified Flying Objects on file all round the world and so, the UFologists conclude, there must be growing evidence for the existence of extraterrestrial visitors in UFOs. In fact, as Ian Ridpath explains in *New Scientist* (14 July 1977), statistics prove just the opposite.

"There are simply too many UFOs being seen to support the extraterrestrial hypothesis. Imagine, for a moment, that there are one million other civilisations in the Galaxy, all sending out starships. Since there must be something like 10 billion interesting places to visit (one tenth of all the stars in the Galaxy), then each civilisation must launch 10,000 space-ships annually for only one to reach here every year. If each civilisation launches the more reasonable number of one starship annually, then we would expect to be visited once every 10,000 years. Alternatively, the higher number of reported UFOs might be taken as indicating that we are something special. If so, then life cannot be a very common phenomenon in the Galaxy — and thus there would be fewer civilisations to send out starships, and we would expect a smaller number of UFOs".

Ian Ridpath concludes: "Despite 30 years of study, the field of UFOlogy has failed to produce *one* concrete example of alien visitation, from any dimension. Most scientists would draw their own conclusion from such an abject lack of results, but they do not have the indefatigable optimism of committed UFologists for whom the Perfect Case, like the Second Coming, is an article of faith".

But what if a panicky schoolboy or housewife tells you: "I've just seen a flying saucer?" and you have no reason to suspect a hoax? Patrick Moore, in a programme devoted to UFOs in the series *The Sky at Night* (B.B.C. Television, 11 December 1979), discussed some of the hundreds of explanations possible to account for unusual sightings of objects in the air, from frisbees to pollen drifting a few feet above his 15-inch telescope. Weather-balloons and other balloons account

for many of the reported UFO sightings: also responsible are car headlights, the Moon seen low on the horizon or through dense mist or cloud, flocks of migrating birds, satellite debris, lenticular clouds, meteors and meteorites, radar reflections (not necessarily from solid objects), flares from jet aircraft, aircraft reflections, ball lightning or similar meteorological phenomena, and ice clouds.

Patrick Moore hoaxed the public by alleging, quite falsely, that he had seen a UFO near East Grinstead in the mid-1950s: over twenty people wrote to the newspaper to confirm his hoax report! There is also conclusive proof that the film of 'UFOs' taken from a New Zealand aeroplane late in 1978 was in fact a film of the planet Venus, and the appearance of swift movement caused not by Venus but by the aeroplane!

Sources include: Ian Ridpath, 'Flying saucers thirty years on', in *New Scientist*, 14 July 1977; and Patrick Moore, *The Sky at Night*, 11 December 1979.

FLYING SAUCERS AT SOCORRO, NEW MEXICO

A mass of new data seems to endanger the Flying Saucer Myth, graphically described by the late Donald Menzel as "the greatest nonsense of the 20th century".

One of the best sources for the erosion of belief is the now declassified material in the official U.S. documents Project Sign (begun in 1948), Project Grudge (1949) and Project Blue Book (1952), the last-named closing in 1969. None of these authorities, nor the independent Rand Corporation investigation for the U.S.A.F., was believed respectable by the UFO Establishment, who claimed that the armed forces and security forces were combining in a cover-up operation. The declassification of saucer-sighting records proves that studies were discounted when they were not to hush up the dangers to our planet, but to save time and money. All the reports were probably misinterpretations or fabrications dreamt up for fame or riches, and there are probably no extra-terrestrial vehicles among us, either now or in the past.

The problem is that sightings make headlines, and exposures rate only one-line apologies, if that. Readers are recommended to keep by their bedside — in case of 'sightings' through the bedroom window — a copy of *UFOs explained* (New York, 1974) by Philip Klass. Klass has gone to great trouble to find out the truth behind the celebrated saucer

landing at Socorro, New Mexico, in 1964. It was apparently a publicity stunt by the local mayor, who owned the land on which the UFO in question made its alleged impression.

FLYING SAUCERS DO NOT COME FROM OUTER SPACE, BUT FROM INNER SPACE

Hundreds of books perpetuate the fallacy that flying saucers exist as *flying saucers*, whereas it is common knowledge to the military that they exist as a variety of known phenomena misinterpreted by the public and multiplied by the charlatans for their own purposes.

John A. Keel ridicules the popular fallacy. "The flying saucers do not come from some Buck Rogers-type civilization on some distant planet", he writes. "They are our next-door neighbours, part of another space-time continuum where life, matter and energy are radically different from ours".

Operation Trojan Horse: an exhaustive study of unidentified flying objects — revealing their source and the forces that control them (London, 1971) may not live up to its ambitious title, but it is certainly long. Mr Keel is contemptuous of the extra-terrestrial theory, stating bluntly that UFOs exist in our own environment, though in a space-time continuum that only occasionally intersects with ours, so that "now you see them — now you don't" becomes a theory at least momentarily tenable. But an examination of the evidence regrettably turns up no concrete proofs of the existence of flying saucers or their inhabitants (if any) even in our infra-terrestrial environment.

BIRD-TRACK FOSSILS HAVE BEEN DISCOVERED IN MASSACHUSETTS

Professor Edward Hitchcock (1793-1864) of Amherst College stunned scientists in 1836 with his reports of species of Ornithichnites (bird-track fossils) which he claimed to have discovered in Massachusetts. A further five years of research and classification brought his list of species up to twenty-seven, as described in the *Final Report on the Geology of Massachusetts* (1840).

For the proof that Hitchcock's 'bird-track' fossils were in fact fossilised prints of dinosaurs and other reptiles, see *American Journal of Science*, 2nd ser., vol.29, 1860, pp.361-3.

FOX-HUNTING HAS BEEN POPULAR IN BRITAIN SINCE MEDIEVAL TIMES

Not at all. British fox-hunting as a popular field sport dates from the latter part of the 18th century. The first reference to hunting the fox occurs as early as 1278, but the most popular field sports in Britain until medieval times were hunting the boar, the deer, and the hare.

FROZEN FOOD FALLACIES

Among the many errors concerning food freezers capable of storing food in bulk are:

1. That housekeeping bills are necessarily cut. This assumes (which is not always the case) that long-term savings on bulk buying will offset a probable increase in consumption and the initial capital cost of the freezer and the increased energy bills paid to keep the freezer working. It often happens that food is wasted, or menus are repetitive to 'use up' what is left in the freezer. "Bulk cooking", writes Carol Macartney, "is a chore unless one has sufficiently large pots and pans, and bulk buying needs to be carefully thought out".
2. All food freezes well. No: as Carol Macartney indicates, "Hard-boiled eggs go rubbery; salad ingredients, like lettuce and chicory, go limp and mushy; milk and single cream separate out". A bottle of fizzy drink might once be placed in the freezer to keep it cool, but never again, after the liquid and gas expand while freezing and the bottle explodes.
3. Freezing is 'unnatural'. "Nothing could be farther from the truth", observes Carol Macartney. Freezing something alters it very little, if at all, and when the food is thawed out, the natural life-cycle resumes. The exceptions are vegetables, which may discolour or develop off-flavours unless some of the enzymes are destroyed before freezing. vegetables should be blanched before freezing; if not, most should be eaten within six weeks of freezing.
4. Frozen food must go bad after a certain time. Not unless there is a power failure. Theoretically, there is no limit to the time during which food may be kept frozen. In practice, however, most home frozen foods will suffer a slight loss of eating quality after a period varying between three and six

months. Fatty foods and bread should not be kept longer than a month, ideally, while sauces and commercially frozen foods should be used within three months. Pork should be eaten within six months, but poultry will keep well for up to a year.

5. Freezing destroys the flavour of food. This observation is faulty. Most commercial frozen foods are on the bland side because they are created for the mass market, so it is easy to see how the idea arose that frozen foods have less flavour. But the flavour has not been destroyed in freezing: it was never present in the first place.

Sources include: The Royal Society for the Promotion of Health, *Frozen food in the home* (London, 1977, pp.5–6: ‘Myths and misconceptions’ by Carol Macartney); and Gwen Conacher, *Food freezing at home*, published by the Electricity Council.

G

“The goal for all is the same. Different names are given to the goal only to suit the process preliminary to reaching the goal” — SRI RAMAN MAHARSHI (1879–1950), *Talks* (Tiruvannamalai, India, 1955).

‘GOOD ENOUGH FOR THE GALATIANS’

How often in argument does one mistaken opponent get the better of another mistaken opponent because the latter is even more ignorant than the former? The fallacy that at least one of two arguments must be correct is nowhere better exemplified than in St Jerome’s scornful comments on St Paul’s reasoning in the Epistle to the Galatians, ch. iii, 16. Jerome observed that, while the argument was not particularly good, it was yet ‘good enough for the Galatians’! A similar fallacy is perpetrated whenever a parent explains to a child that the child was not born, but ‘found under a mulberry bush’ or ‘brought by a stork’. It might not be correct, the reasoning runs, but it is ‘good enough for a child’.

GALILEO DEFIED THE INQUISITION WITH THE WORDS “EPPUR SI MUOVE” (YET IT *DOES* MOVE)

The publication of Galileo Galilei’s *Dialogo dei due massimi sistemi del mondo* (Florence, 1632) evoked enormous interest, and provoked ecclesiastical animosity for its defence of the Copernican theory of a heliocentric solar system, as opposed to the orthodox geocentric view. In August the book was banned and in October Galileo was summoned by the Papal Inquisition to Rome. He was finally examined on 21 June 1633, and on the following day recanted.

‘Everybody knows’ that he rose from his feet after recanting, stamped his foot in anger, and shouted defiantly “Eppur si muove” — “Yet [the Earth] *does* move”. The error persists in 1978 (assertion by Renée Haynes — “Eppur se muove” [sic] wrote Galileo — in *The Times Literary Supplement*, 17

March 1978) and in 1979, on p. 89 of *Famous last words* (London, 1979) compiled by Jonathon Green.

In fact, the first record we have of this 'saying' appears as late as 1761, one hundred and nineteen years after the death of Galileo. The source is the notoriously unreliable *Querelles littéraires* (vol. 3, p. 49) by the Abbé Iraiilli. See Giorgio di Santillana, *The crime of Galileo* (London, 1958).

IN ENGLISH PLACE-NAMES, 'GATE' IMPLIES THE PRESENCE OF A GATE

This hoary fallacy is repeated incessantly, and indeed many who have never studied etymology quite rightly proclaim that the Anglo-Saxon *geat* does indeed mean 'gate'.

But, in those parts of England (notably the East) which saw invasion and occupation by the Danes, the Danish 'gata' means 'road' or 'way' or 'street', so that as H. F. Tebbs correctly states in *Peterborough: a History* (Cambridge, 1979), the 'Cumbergate' of Peterborough is the 'street of the woolcombers'. However, the 'Westgate' of Peterborough is not the 'West street' but the 'street of the weavers, or websters'. Folk etymology is often downright wrong, and where correct it is frequently misleading!

ALL GAUL IS DIVIDED INTO THREE PARTS

Possibly the most famous sentence in Latin literature is that which opens *De bello Gallico* by Julius Caesar: "Gallia est omnis divisa in partes tres, quarum unam incolunt Belgae, aliam Aquitani, tertiam, qui ipsorum lingua Celtae, nostra Galli appellantur" (All Gaul is divided into three parts, one inhabited by the Belgae, another by the Aquitani, and the third by the people whom we call Galli, and who call themselves Celtae).

But Caesar is of course wrong, and he knows he is. He has deliberately omitted Gallia Narbonensis, also called Gallia Braccata (*braccae* = breeches) from the custom of wearing the national breeches. Gallia Narbonensis was named after Narbo (modern Narbonne) and covered much of modern Provence.

Caesar's subject was Gallia Comata, the land of the tribes-people whom he wished to tame by force of arms.

"The real puzzle is not the best translation of *omnis*, but why the Belgae and the Aquitani should apparently be denied

the name Celt. In the case of the Aquitani the answer is simple: with the exception of one tribe, the Bituriges Vivisci, at the mouth of the Garonne, they were 'different in physique and language from the Celtae and more like the Iberians' (Strabo 4,176 and 189,2); and in fact it is tempting to call them Iberians outright, because their race would then bestride the Pyrenees as the Basques do today", according to D. B. Gregor (*Celtic*, Cambridge, 1980).

Source: Caesar, *Gallic War, Book 1* ed. by A. H. Allcroft and F. G. Plaistowe (London, n.d.)

GEOMANCY

In volume 1, western ideas about geomancy were summarised. Chen Li-fu, of the Council of the Chinese Cultural Renaissance in Taipei, has contributed a summary of the Chinese concept of geomancy which, though equally fallacious, is very different.

"The Confucians advocated administration by talent, and hoped that a ruler could appoint talented people to government positions. Mencius said that a ruler should 'put the talented and able in government jobs'. But the decision as to who was talented and who was able was made by a ruler, who had the authority to appoint anyone, with or without qualifications. Law had no force on a ruler, and talent meant nothing to him. The ruler was unrestricted, so neither the Confucians nor the Legalists could realize their hopes.

In a time when democracy was unknown, scholars had no way to break this obstacle but placed their hopes on heaven, or God. This is the reason why theories of geomancy became popular during the later Han dynasty.

The theories of geomancy had existed in China for a long time. But the theories of *yin* (female), *yang* (male), *shun* (prosperity) and *ni* (adversity) were considered as having to do with natural phenomena, not with either personal affairs or with government administration. A legend is told of the Chou dynasty that, when it was reported that six *yih* (sea birds) were seen flying over the capital of the Sung state in the interior, an imperial officer said, "This is a matter of *yin* and *yang*, which indicates neither good luck nor bad luck to us. Our good or bad luck is decided by ourselves".

In the *Book of Changes*, there were statements such as: "When the heaven shows some phenomena they indicate good

or bad luck''. This is the first recorded Chinese opinion that human affairs can be affected by natural phenomena. The first Chinese philosopher of geomancy, Tsou Yen, lived in the period of the Warring States, but his writings have been lost. After the foundation of the Han dynasty, and the expansion of centralized power, the authority of the Emperor became unlimited. To curb his excessive power, scholars turned to geomancy, hoping that the fear of heaven's punishment might induce the emperor to act for the benefit of the people.

Tung Chung-shu, in his book *Chun Chiu Fan Lu*, used a mixture of Confucianism and geomancy to interpret historical events in the periods of Spring and Autumn and the Warring States. His theory was that the air of heaven and earth are combined, finding their two extremes in the *yin* and the *yang*. With the coming into existence of these extremes, the four seasons and the five elements were produced. According to Tung, "Heaven and people are one. Those who obey the mandate of heaven will prosper, and those who defy it will perish". Tung said; "When Confucius wrote the *Annals of the State of Lu*, he described human affairs as well as natural phenomena. Every time there was a great mistake on the part of human beings, there followed a natural disaster".

Tung's theory was adopted in the later Han dynasty, to the point that the three *Kung* (chief of the general staff, prime minister, and imperial censor) were dismissed by the emperor whenever a natural disaster occurred. Chen Chung condemned this practice, saying "The three *Kung* were not the persons who should have been held responsible. We know they had no power but only titles. The man who should be responsible was the *Shang Shu* (the emperor's secretary-general), because he had the power and handled national affairs. Therefore, to blame the three *Kung* and not the *Shang Shu* for natural disasters was unfair".

Professor Chen concludes his study of ancient geomantic philosophy: "This unreasonable system based on superstition, however, lasted for a long time. It was only after the later Han dynasty ended, and in the Period of the Three Kingdoms (220-265), that the practice was stopped by Emperor Wen of the Wei state".

DISEASE CAUSES GERMS

It has been proved experimentally time without number that

germs cause disease. However, if you happen to believe the opposite you are in good company: that of as many naturopaths as you can find condemning drugs as somehow 'less natural' than 'natural remedies', and that of George Bernard Shaw.

I wonder how many playgoers who enjoy the satire and paradox of *The Doctor's Dilemma* also bother to read the extensive preface that Shaw wrote for his play? Or the papers, collected as vol. 13 of the standard edition of Shaw's Works, which he entitled *Doctors' Delusions*? Or chapter XXVII, 'The Collective Biologist', of his *Everybody's political what's what?* ? The great GBS, compulsive talker and opinionated wit, proved yet again that the general public often prefer to believe an interesting falsehood rather than a plain and simple fact.

The preface to *The Doctor's Dilemma* being notorious, it may be more useful to take the lesser-known passage from *Everybody's political what's what?* (London, 1944, p. 240):

"Now diseases spread beyond the class in which they begin. A German monk named Oken discovered in 1808-11 that our bodies are made up of living cells, which he was intelligent enough to call Transmutations of the Holy Ghost, which is the Christian name of the Life Force. The smallest of these cells, invisible even through the electron microscope, may swarm in the blood. When the Life Force goes wrong, how or why nobody knows, they change their shapes and divide into armies with distinctive uniforms, in which they fight and eat one another, whilst their human host suffers discomfort, pain, disablement, disorder of normal functions and their organs: in short, disease or illness. When the lungs go wrong a uniform peculiar to them is assumed by the cells, another and different one when the bowels go wrong and produces involuntary contractions that may kill the patient, and so on. These specialized cells, called germs, microbes, bacilli, spirochetes, leucocytes, phagocytes, and what not, can escape into the air by the breath, the spittle, the handkerchief, the excretions, the clothes, and can convey the disease to anyone unlucky enough to come in contact with them while in a negative state of defence, and thus unable to prevent them from multiplying millionsfold by splitting in two".

Bernard Shaw concludes: "When the physiologists discovered these curious incidents of disease, their first crude

conclusion was that the microbes not only operated and spread the diseases but were actually the diseases themselves, and that if you could kill the microbes you could abolish the diseases. Like all crude first conclusions this was easily and eagerly swallowed, and at once became popular and persistent, as it is at present”.

Shaw therefore advocated the abolition of handkerchiefs in favour of spitting and blowing one’s nose on the ground; and the abolition of drains in favour of discharging waste direct from sewers into open streams and rivers, where sunlight — he claimed — would kill the germs in a matter of seconds.

As a public health adviser, Shaw was an entertaining dramatist.

THE GETTYSBURG ADDRESS WAS FIRST PUBLISHED BY BAKER & GOODWIN IN NEW YORK

Until recently, it was almost universally assumed that Abraham Lincoln’s Gettysburg Address first appeared in book form in 1863 in a 48-page booklet published by Baker and Goodwin in New York.

We now know, however, that this edition was preceded by one virtually hidden on page 16 of Edward Everett’s much longer oration, published on 22 November 1863 by the *Washington Chronicle*, and totally forgotten, while the immortal words of Lincoln on democratic government ring as gloriously as ever.

GHOSTS

Nineteenth-century ‘ghosts’ reported in volume 1 are discredited, but the sighting of new phantoms continues unabated in the world of sensational journalism.

John G. Fuller, whose writings we have already examined under the entry **ARIGÓ**, is the author of *The ghost of Flight 401* (New York, 1976), which purports to prove that ghosts have survived the crash of an Eastern Airlines flight from New York to Miami on 29 December 1972.

Throughout the whole book there is not a single statement that has been proved or verified experimentally under test conditions, and the onus is entirely on John G. Fuller to supply such proof before his stories can be credited, since they

contradict what we know of the body's death. No spiritual survival has yet been proved.

R. A. Nagler observes, reviewing the book in the *New York Library Journal* (15 October 1976), how "Fuller's leaps of faith that pass for documentation mar his credibility".

SYLF AND THE RULE OF GIANTS

At the last count, Christia Sylf had published over 1200 pages in three volumes of a *Chronique des géants* (Paris, 1969-72) aiming to demonstrate that the gods now worshipped by the human race were in origin a race of giants. Ever since, men have been getting smaller.

The only flaw in the basic reasoning is that, during the whole course of human evolution, men and women have tended gradually to get taller and stronger. If we are ever to have a race of giants, it will be in the future, not in a remote, unattested past.

RUDOLF GLABER AND THE YEAR 1000 A.D.

For centuries it was widely believed that the year A.D. 1000 was a turning-point in the history of Christian civilization all over Europe. R. F. Treharne cites this belief as "an example of the common human tendency to prefer and to repeat uncritically a sensational explanation of developments which in fact came about by quite normal means".

The legend is that, during the course of the tenth century, men and women who believed that the Antichrist would appear at the end of the first Millennium [counting from *when?* Ph.W. See **JESUS WAS BORN IN 4 B.C.**] gradually panicked more and more, lost interest in work and their other everyday activities, preferring to take their pleasures swiftly or — if otherwise temperamentally inclined — to spend the time in prayer against the Day of Doom ('Doom' meaning Judgment). "The Church itself", states the *Cambridge Medieval History* (vol. 3, Cambridge, 1922), "appears as the victim of the same anarchy in which lay society is weltering; all evil appetites range unchecked, and, more than ever, such as the clergy as still retain some concern for religion and for the salvation of the souls committed to their charge mourn over the universal decadence and direct the eyes of the faithful towards the spectre of the end of the world and of the Last

Judgment. Let us, however, avoid laying too much stress upon these allusions to the final cataclysm predicted in the Apocalypse for the period when the thousand years should be fulfilled, during which Satan was to remain bound. Historians have long believed that, as the year 1000 drew near, the populations, numbed with terror, and, as it were, paralysed, awaited in painful anxiety, crowded together in the churches with their faces to the ground, the catastrophe in which they believed the world was about to founder. A few passages from contemporaries, wrongly interpreted, account for this erroneous impression. As the thousandth year approached, the people, small and great, priests and lay folk, continued the same way of life as in the past, without being alarmed by those apocalyptic threats in which, even after the thousandth year was past, certain gloomy spirits continued to indulge”.

The predictions were largely the fabrication of one Rudolf or Rodolphe Glaber (also known as Rudolf den Kahlen), who wrote in the second quarter of the 11th century and died about 1050. He described hysterically the decay of virtue and religion imminent, and the terrible convulsions of nature to be expected in the year 1000. There is, however, very little evidence that his works had any effect on the mass of the people, most of whom were illiterate.

On the contrary: Norman Cohn demonstrates from documents that the main developments in millenarianism and the related mystical anarchism occurred in Western Europe between the 11th and the 16th centuries, in his *The pursuit of the millennium* (2nd ed., London, 1970).

Such fallacious beliefs have never stopped. J. F. C. Harrison, for example, has just produced a 271-page history, *The Second Coming: popular millenarianism, 1780–1850* (London, 1979). To bring us right up to date and into the future so beloved of false prophets (the only prophets there are), the specialised occultist magazine *Alpha* asked on the front cover of its November-December 1979 issue whether we might have only twenty years to go before final destruction, presumably on the principle that, if we got it wrong in 1000 A.D., we'll try 2000 A.D!

Sources include: Maurice Prou, *Raoul Glaber: les cinq livres de ses histoires* (Paris, 1887); and R. F. Treharne, 'The legend of the year A.D. 1000', in Historical Association, *Common errors in history* (2nd ser., London, 1947).

ST. ANSELM PROVED THE EXISTENCE OF GOD

Referential failure is the fallacy in the well-known but erroneous ‘proof’ adduced by St Anselm (c. 1033–1109), Archbishop of Canterbury. His method to prove the existence of God was to demonstrate that ‘that than which no greater thing can be conceived’ must exist, of itself a curious notion.

“Suppose that than which no greater thing can be conceived doesn’t exist outside our minds. Then it is not as great as it would have been if it had existed. Therefore we can conceive something greater than that than which no greater thing can be conceived, which is impossible. Therefore our original supposition is incorrect”.

Anselm’s logical fallacy in the second sentence lies in assuming that there is something to which ‘it’ refers. This means that he assumes that the expression ‘that than which no greater thing can be conceived’ also refers to something. But he may not assume this in logic, for he assumes the existence of something which he set out to prove exists!

Anselm’s faulty argument does not invalidate the theory of God’s existence, but neither does it validate that theory.

GOLD CAN BE GROWN

In his *Relationes curiosae* (Hamburg, 1683), E. W. Happel fell prey to the ancient fallacy that gold can be grown, an idea nearly as prevalent in the Middle Ages as the fallacy concerning the possibility of transmuting base metals into gold.

The growable gold, ‘aurum vegetabile’, has been claimed in legend from Poland, Hungary, Germany, and France. Of course there is not a word of truth in it. No metal can be said in any meaningful way to ‘grow’ unless you find more of it, or expand it. Our precious metals are not being depleted in the same wasteful way as are our fossil fuels (such as coal or oil or natural gas), but few significant gold mines are left. The cliché “he’s found a gold-mine” was always an exaggeration, for the immense labour of mining sufficient gold for profitability has seldom been rewarded in a more spectacular manner than, say, coal mines or tin mines.

A GRANGERISED BOOK IS ONE PUBLISHED WITH PROFUSE ILLUSTRATIONS FROM OTHER BOOKS

The common error repeated yet again in Josefa Heifetz

Byrne's *Dictionary of unusual, obscure, and preposterous words* (London, 1979) concerning 'grangerised' books is that, in Mrs Byrne's words, James Granger's *Biographical history of England* (3 vols., 1769–74 and later editions) was "richly illustrated" with "pictures and designs from the books of others".

No: the whole, and original, idea of Granger's book was to print some blank leaves on which owners could paste their own illustrations, whether drawn by themselves, or removed from other works. The notion quickly caught on, and other books were published with a view to being 'grangerised'.

GRAPES CAN CURE STOMACH ULCERS AND ALCOHOLISM

John Camp reports an announcement in the magazine *Prevention* to the effect that a diet of grapes will be of value in the treatment and cure of arthritis, rheumatism, alcoholism, mental instability, migraine, kidney ailments and stomach ulcers. He adds: "With the 'nature cure' industry geared either to the relief of symptoms or to protecting the reader from illnesses that he is probably never likely to suffer from, it is no surprise that business is booming. Thousands of people who claim to distrust doctors and begrudge the cost of medical insurance cheerfully spend their hard-earned money on products of unspecified content, products which promise only to 'revitalize the bloodstream, give sparkle to the eye, colour to the lips and spring to the step'. Curiously enough, few people who swallow either these tonics or their descriptions seem to prove their efficacy".

Source: John Camp, *Magic, myth and medicine* (London, 1973).

THE GREAT DANE IS A BREED OF DANISH DOGS

The Great Dane, the largest breed within the European mastiff family, is not connected with Denmark in any way so far historically recorded.

In the sixteenth century, Great Danes were most frequently known as 'English Dogges', and about 1680 they were bred in great numbers at the princely courts in Germany. The largest and best of the breed were called 'Chamber Dogs' (*Kammerhunde*) and wore gilded collars, while the lesser animals were known as 'Life Dogs' (*Leibhunde*) and wore

collars with a silver finish. At the first German dog show, held at Hamburg in 1863, "some very grave-looking Doggen took part in the event". Of these, 8 were said to be 'Danish Doggen' and 7 announced as 'Ulmer Doggen'. "The truth is", confides *The new complete Great Dane* (New York, 1974), "that of all these dogs not one had ever seen Denmark, nor had any of them even been born there, as their papers indicated." At the 1876 show, the judges called the Great Dane the 'Deutsche Dogge', as it had been called for centuries.

THE GREAT TREK OF SOUTH AFRICAN BOERS WAS DUE TO THEIR ANGER AT THE FREEING OF THE SLAVES

The usual explanation given in school history books is that the 1836 trek by the South African Boers was caused by their resentment at the freeing of the slaves and at the maladministration of the compensation.

In fact the Great Trek was caused primarily by a shortage of good land: there would have been a migration even without political differences. Furthermore, although the frontier Boers were angry at the British actions, their outrage at the emancipation of slaves constituted only a part of their grievances. The non-arid land within the then borders of the Cape Colony had all been taken up by pioneers, and the young Boers (pronounced correctly more like 'burs' than like 'bores') wanted to acquire fresh land of their own. Resentment was heightened by missionary teachings that white and coloured people were equal, by a legal ordinance decreeing racial equality enacted in 1828, by the emancipation of slaves in 1833-4, and by the reversal (due to Christian missionary propaganda) of Sir Benjamin d'Urban's annexation of Kaffir territory which was intended to provide land for new farms.

Sources include: E. A. Walker, *The Great Trek* (5th ed., London, 1965); and Historical Association, *Common errors in history* (London, 1951).

THE GREATEST ACHIEVEMENT OF GREEK ART IN THE FIFTH CENTURY B.C. WAS IN SCULPTURE

Charles Seltman, in his *Approach to Greek art* (New York, 1960), argues very convincingly that the major mode of classical Greek art was not that of the sculptor, but that of the

engraver. "Exciting as are the marbles of the Parthenon and certain sensitive tombstones of Attic work, it is not among such things that the finest art of the fifth century is to be sought. The most admired artists among the Greeks themselves were not the masons, nor even the modellers, casters, and finishers of fine bronzes, but the *celators* [or engravers]".

"For more than four centuries men have been instructed that the very best things which the Greeks ever made were of marble, and that is why you may read in a book on Greek art written little more than a score of years ago that 'sculpture was in many ways the most characteristic art of Greece; . . . it achieved the highest attainments'. Such has been the usual approach to Greek art. The prize must go to sculpture in stone, with which large works cast in bronze were often associated; next came painting, which is now represented mainly by drawings made on the surface of ancient vases; third came the so-called 'minor arts', under which label were grouped with condescension and convenience the work of die-cutters, gem-engravers, jewellers, and celators (or metalchasers). But does such 'classing' in any way correspond with the ideas which the Greeks themselves held about artists and art? It is certain that they had very different views. Even in the distant age of bronze the inhabitants of Greece and the islands held the skilled worker in metal in very high regard. His art was both a mystery and a delight, and he was thought to owe his gifts to supernatural beings around whom many legends grew".

Although a subject of this nature is not amenable to clear-cut, final objective judgments, there is no doubt that the exquisite vases and metalwork of the Greeks have been consistently under-rated.

CLASSICAL GREEK CIVILISATION MADE LIFE COMFORTABLE FOR ITS CITIZENS

E. B. Castle, in *Ancient education and today* (Harmondsworth, 1961), has emphasised that the material life of the Athenian civilisation, which we take as the paradigm of classical Greek city-states, was characterised by extreme poverty. "Almost every tool and gadget which make our lives bearable were unknown to the Greeks. The homes of the men who built the Parthenon would have shocked the dwellers in a modern council house".

In *The Greek Commonwealth* (Oxford, 1911), Alfred Zimmern stressed that Herodotus did not exaggerate when writing that poverty and impossibility were the constant companions of the Athenians. "It is easy to think away railways and telegraphs and gasworks and tea and advertisements and bananas. But we must peel off more than this. We must imagine houses without drains, beds without sheets or springs, rooms as cold, or as hot, as the open air, only draughtier, meals that began and ended with pudding, and cities that could boast neither gentry nor millionaires. We must learn to tell the time without watches, to cross rivers without bridges, and seas without a compass, to fasten our clothes (or rather our two pieces of cloth) with two pins instead of a row of buttons, to wear our shoes or sandals without stockings, to warm ourselves over a pot of ashes, to judge open-air plays or law-suits on a cold winter's morning, to study poetry without books, geography without maps, and politics without newspapers. In a word we must learn how to be civilized without being comfortable".

THE INTERIOR OF GREENLAND IS ICE-FREE

Adolf Erik Nordenskiöld (1832–1901), who achieved great celebrity by leading the *Vega* expedition through the Northwest Passage, was a distinguished scientist reputed to be the greatest expert on the Arctic of his period.

The purpose of his expedition to Greenland in 1883 was to prove 'wholly unjustified' the widely-held belief that Greenland's interior is covered with ice. "On the contrary", explained Nordenskiöld, "the following considerations seem to indicate that on the whole it is a *physical impossibility* that the interior of an extensive continent should be completely shrouded in ice under the climatic conditions that obtain south of 80° North latitude on our globe". First, if a glacier is to be formed, more snow must fall than can be melted in the summer, a condition which must be fulfilled at the source regions of all the glaciers, including those which come down to the sea along the shores of Greenland. But where are the glacier-sources: in the high centre, or in narrow mountain chains surrounding a lower interior? In the former case, air that comes in from the sea will descend from the coastal mountains and be warmed as it descends. If the air descends to the same elevation it had before the water-vapour in it was

condensed out as snow, it will in fact be warmer than before its ascent, for it will contain the 'latent' heat released whenever water is condensed. Nordenskiöld believed that the interior of Greenland lies lower than the surrounding mountain chain, and will have no ice cover, for winds reaching the interior are relatively warm and too dry to contribute enough snow to maintain such a cover. Why may not Greenland have a high centre, with a permanent ice cover, as observers (including Nordenskiöld himself) might have deduced from coastal inspection? The analogical argument is that, if one does not know from experience what the interior is like, one judges what it must be like from the geomorphology of lands which are already known. "We do not find such a form in any of the continents of the globe whose relief is known", stated Nordenskiöld, "and one can therefore with the utmost probability assume that Greenland does not possess it. On the contrary, the geologic character of Greenland, which in many respects resembles that of Scandinavia, indicates a relief much like that of our country, consisting of mountain ranges and peaks alternating with deep valleys and plains".

Nordenskiöld *might* have been right by analogy. In fact he was wrong, in the same way that an Egyptian oasis-dweller of Siwa or Fayyum would be wrong if he assumed — without having been there — that oases in the east of Egypt (on or near the Nile) would be as arid as his own.

In 1883 Nordenskiöld made the expedition destined to answer once and for all the question of the ice-free interior of Greenland. He found only the monotonous ice-sheet that later expeditions have found. Even then, however, Nordenskiöld was not convinced, until Nansen's crossing of 1888.

Sources include: John Leighly, 'Error in geography', in Joseph Jastrow, *The story of human error* (New York, 1936, pp. 114–9).

THE WORD 'GREMLIN' WAS INVENTED DURING WORLD WAR II

On the radio programme *Desert island discs* (British Broadcasting Corporation, 27 October 1979), the writer Roald Dahl claimed to have invented the word 'gremlin' during the Second World War.

B. J. Watson of Hull, in a letter to *Radio Times* (1–7 December 1979), claimed however that the word was already

familiar to readers of *The Aeroplane*, where it occurs three times in a poem published on 10 April 1929. Gremlins are “mischievous imps which inhabited aircraft and were held responsible for all the unaccountable failures, both mechanical and human, which occurred. They were particularly active during the War when there were, of course, many more unexplainable incidents”.

The earliest published evidence for ‘gremlin’ in the 1972 Supplement to *The Oxford English Dictionary* is dated 1941, but Dr R. E. Allen, Senior Editor of the Oxford dictionaries, writes: “The only additional information we have in our files is an unverified reference to *Newsweek* of 7 September 42, which is said to trace the word back to 1923” [personal communication, 1979].

Can any reader offer an instance of the use of ‘gremlin’ before 1923?

‘GREY OWL’ WAS A NORTH AMERICAN INDIAN

Many authors use pen-names, for a variety of reasons, but do not claim a whole new identity in the process to mislead the public. Where an attempt is made to deceive the public, the imposture must be revealed.

Such is the case of ‘Grey Owl’, who emerged from the Canadian wilds in the 1930s claiming to be Wa-Sha-Quon-Asin (meaning ‘Grey Owl’), son of an Apache mother and a Scottish-born Indian scout, born in Mexico.

But he was really Archibald Belaney, an Englishman raised by two maiden aunts in the seaside resort of Hastings. In 1906 he left England for Canada, where he lived for a time with the Ojibway Indians, and married an Ojibway girl. In 1915 he joined the Canadian Army and served in Flanders, where he was wounded. Invalided out, Belaney spent some time in a military hospital near Hastings, and married a childhood sweetheart, Florence Holmes. However, he returned to Canada alone late in 1917, where he took up again with his Ojibway wife and began writing the sequence of excellent wild life books which seemed so authentic that his publishers were easily hoaxed into assuming that he was a true Indian. *The men of the last frontier* was enthusiastically reviewed, and Lovat Dickson, in his autobiographical *House of words* (London, 1963), explains how he was induced to publish

Pilgrims of the wild and *Tales of an empty cabin*, which he did in all good faith.

“Grey Owl” died in 1938, at the age of 51, following his second triumphant British tour, during which he greeted King George VI in Ojibway and English with ‘I come in peace, brother’. Belaney’s maiden aunts were soon traced, and frankly gave the show away.

Sources include: Norman Moss, *The pleasures of deception* (London, 1977, pp. 167–175).

THE GRYPHON

Lewis Carroll, who wrote a great deal on logic and mathematics, peopled Alice’s Wonderland with both real and imaginary animals, so that children who know Bill the Lizard and the White Rabbit find no difficulty in accepting the objective reality of the gryphon. After all, one might argue, if the luckless dodo once existed, might not the gryphon have done so too?

Certainly the Greeks believed the fabulous beasts to inhabit Scythia, where they guarded Scythian gold. But by the 17th century, the belief was falling gradually into desuetude. As Sir Thomas Browne writes: “That there are Griffons in Nature, that is a mixt and dubious animall, in the fore-part resembling an Eagle, and behinde the shape of Lion, with erected eares, foure feet, and a long taile, many affirme, and most I perceive deny not; the same is averred by Aelian, Solinus, Mela, and Herodotus, countenanced by the name sometimes found in Scripture, and was an Hieroglyphick of the Egyptians.

“Notwithstanding wee finde most diligent enquirers to be of a contrary assertion; for beside that Albertus and Pliny have disallowed it, the learned Aldrovand hath in a large discourse rejected it; Mathias Michovius who write of those Northerne parts wherein men place these Griffins, hath positively concluded against it, and if examined by the doctrine of animals, the invention is monstrous, nor much inferiour unto the figment of Sphynx, Chimaera, and Harpies: for though some species there be of a middle and participating natures, that is, of bird and beast, as we finde the Bat to be, yet are their parts so conformed and set together that we cannot define the beginning or end of either, there being a commixtion of both in the whole, rather then an adaptation, or cement of the one unto the other”.

Gryphons don’t exist.

THE ROUND STONES OF GUATEMALA

"In the Guatemalan jungle quantities of stone balls have been found, made of a kind of rock very rare thereabouts, with diameters varying from an inch or two to several yards", writes Robert Charroux in *The mysterious unknown* (London, 1972), translated from *Le livre du mystérieux inconnu*. "When the site was thoroughly examined and a few of the smaller stones which had been shifted in the course of the centuries were put back where they belonged, it was found that they had been arranged so as to represent our solar system and the principal constellations of the cosmos". What did this prove?

"It was an astonishing discovery, which makes it abundantly clear that the Mayas had a knowledge of astronomy — which, indeed, is also shown in the monuments and their almanacks", concludes M. Charroux in triumph.

Were it not for the fact that the year after the above appeared in English, the same author confessed on p. xvii of his *Lost worlds* that the round stones are not vestiges of an ancient civilization at all, but are of purely volcanic origin.

The lapse in logic is appalling or amusing, depending on your point of view: the Mayans studied astronomy, so we turn a volcanic field into a representation of the cosmos by moving some stones from one part of it to another! See also THE CANDLESTICK OF THE ANDES.

BACHOFEN AND GYNAECOCRACY

Johann Jakob Bachofen, a Swiss professor of Roman Law and later a judge at Basle, is responsible for a mistaken view of the historical development of human society. The major work stating his position is *Das Mutterrecht: eine Untersuchung über die Gynaikokratie der alten Welt nach ihrer religiösen und rechtlichen Natur* (Stuttgart, 1861).

Bachofen's theory was that human society was originally promiscuous, with a steady progression to a cult of female deities culminating in feminine rule (matriarchy) in primitive races in America, Africa and Asia, and finally progression in modern society by masculine rule (patriarchy). Students of human organization nowadays repudiate Bachofen's theory, together with its corollary that acceptance of matrilineal descent implies a society *controlled* by women. This is refuted by many examples, such as matrilineal descent in present-day Indian communities ruled by men.

H

“How rarely reason guides the stubborn choice,
Rules the bold hand, or prompts the suppliant voice”.

—SAMUEL JOHNSON, *The vanity of human wishes*.

TEMPERATURE AND HABITABILITY ARE CONNECTED WITH LATITUDE

The assumptions of the ancient Greeks, both right and wrong, were frequently inherited by the Romans and—unless they clashed with Church dogma—subsequently found their way into medieval encyclopedias, and even—as in the case of astrology or belief in ghosts—into the modern *Weltanschauung*. Such is the case with ideas about the habitability of the Earth, and its range of temperature.

The Greeks were familiar with the harsh continental winters of Scythia, near the Euxine (our Black Sea) and with the heat and desolation of the North African and Arabian deserts. Their experience led them to believe that Athens, Corinth, Thebes, and the islands represented the centre of the habitable world, with ideal temperatures. The farther one roved from the shores of the Mediterranean, they taught, the less habitable the world became.

Later studies of climatology and demography have led to very different conclusions. Moreover, human types have evolved regionally to cope adequately with local conditions: Eskimoes and Australian aborigines might soon die if confronted with each other's conditions, or with those of Greece. Latitude is only one of many determining factors. The fallacy of the Greeks was to assume that specific conditions applied generally: this corresponds to the error of an experimenter with rats who assumes that lessons learnt from rats will be applicable to human beings.

HADES IS A PLACE

Hades is not a place. It is not even an imaginary, legendary, or

mythical place. It is the name of a god—Pluto. In Greek mythology, he is the god of the underworld, a gloomy, sunless kingdom barred by the rivers Styx, Acheron, Phlegethon, and Cocytus.

The ‘kingdom of Hades’, that is Pluto’s kingdom, gradually came to be misunderstood by contraction as ‘Hades’, so that Hades became a place-name. However, out of deference to Greek mythology, it is appropriate if we return to the usage of ‘the kingdom of Hades’, and keep ‘Hades’ for the god Pluto himself. If you believe that the Roman poets thought the kingdom of Hades a horrible region, it is worth recollecting that Virgil places the blessed dead in Elysium, itself situated within the kingdom of Hades.

RICHARD HAKLUYT WAS A GREAT TRAVELLER AND FOUNDED THE HAKLUYT SOCIETY

The greatest anthology of writings on the voyages and discoveries of the Elizabethans is Richard Hakluyt’s *The principal navigations, voyages, traffiques and discoveries of the English nation* (3 vols., London, 1598–1600). It contains over 1,700,000 words, and includes all the English-language writings he could find, as well as translations from several European languages. The one-volume edition of 1589 was superseded by the definitive 3-volume edition which was to be described by James Anthony Froude as ‘the prose epic of the modern English nation’. However, Hakluyt himself—though he corresponded with Mercator and Ortelius, and met Drake, Frobisher, Gilbert and Raleigh—never travelled farther than France. The Hakluyt Society named in his honour and still flourishing today was founded as late as 1846.

‘HANDLEY CROSS’ IN R.S. SURTEES IS ACTUALLY CHELTENHAM

The most celebrating English sporting novelist, Robert Smith Surtees (1803–64), wrote a memorable work of fiction, *Handley Cross* (1843), published five years after he had made his name with *Jorrocks’s Jaunts and Jollities*.

A pseudonymous ‘Mouse in the Corner’, writing in *The Illustrated Sporting and Dramatic News* of 20 November 1886, proved to his own satisfaction that Handley Cross was a thinly-veiled account of Cheltenham, and that John Jorrocks was to be identified as one Paul Crump. Then J. Fairfax-

Blakeborough, contributing to *The Field* of 29 April 1916, offered evidence for the identification of Handley Cross with Croft Spa near Darlington, a part of the country not far distant from Surtees' own birthplace. Leamington Spa was a favourite candidate of other writers, who judged by the descriptions of Handley Cross as a spa.

Then E. W. D. Cuming, contributing to *Blackwood's Magazine* in October 1924, proposed Shotley Bridge in Durham, while A. H. Cowie offered Ashford Vale in Kent to readers of *The Times Literary Supplement* (11 and 25 March 1926).

Who is right? If we look at the account by Surtees, Handley Cross was originally an unpretentious, pretty little village in the middle of the Vale of Sheepwash. Its whitewashed, thatched cottages formed a straggly square around the village green, and there was just one pub: the 'Fox and Grapes'. But Roger Swizzle, exploiting the mineral spring, turned the rustic village into a fashionable new spa with a Crescent, an Esplanade, a large pump-room, and several hotels.

Robert Collison, in *A Jorrocks handbook* (London, 1964), states that: "As far as the Midland and Northern towns are concerned, there are various important objections. In the first place, it is fairly obvious that Jorrocks was within easy reach of London, and that moreover he would have been unwilling to remove very far from that city when he was still carrying on his business there. Also, we are told that Handley Cross was within twenty miles of the coast where lily-white sand was collected for London. These two points seem to indicate a terrain in the south-eastern part of England. The present writer suggests Rayleigh in Essex as a possibility . . .".

The truth probably lies nearer to R. L. Collison's concluding view: "It must be admitted that the most likely possibility is that Surtees simply created in Handley Cross a pastiche of the many spa towns he had visited, and that he had no particular town in mind at all".

MALE HARES GIVE BIRTH

An idea recorded at least as early as Honorius of Autun's *Elucidarium* (c. 1095) which found its way into the 13th-century *Elucidario* (later wrongly divided into two words *Elucidario*) at one time attributed to Sancho 'el Bravo' but more probably compiled in the reign of Sancho IV (1284-95).

Chapter LXXIX is entitled 'Porque rraçon las liebres tanbien se enpreñan et paren los machos como las fenbras' (Why male hares become pregnant and give birth, as do the females), and chapter LXXXIX reveals the antiquity of the fallacy that babies born after seven and nine months survive, while those born after eight months die ('porque rraçon bive la criatura que nasce de nueve meses, e á syete, é non la que nasce á ocho'), while many chapters are concerned with various questions concerning angels, and give what readers must have thought were authoritative answers!

Sources include: Pascual de Gayangos (*ed.*), *Escritores en prosa anteriores al siglo XV* (Madrid, 1857); and Philip Ward, *The Oxford Companion to Spanish Literature* (Oxford, 1978).

HEADACHE CAN BE CURED BY INCANTATION

Irish cures reported for headaches are generally more fearful than the headaches. One remedy surviving into the 20th century is to shave the head and apply a mustard poultice. Another is to rub the forehead with crowfoot, which is normally such a successful counter-irritant that the patient forgets all about his headaches!

A remedy from the eighth century which is probably no less efficacious than the two attempts above, and is consequently used in some villages to the present time, is a religious chant which, in some garbled form or other, goes something like this: "Caput Christi, oculus Isaiae, frons nassium Noe, labia lingua Salamonis, collum Temathei, mens Benjamin, pectus Pauli, junctus Johannis, fides Abrache, Sanctus, Sanctus, Sanctus, Dominus Deus Sabaoth". Having recited this, one spits on the palm, rubs the spittle on the forehead, says the Paternoster thrice, and makes a cross of spittle on the crown of the head, followed by a U sign.

If that doesn't work, you still get full marks for effort.

Source: Patrick Logan, *Making the cure: a look at Irish folk medicine* (Dublin, 1972).

PITY MY BROKEN HEART

From about 1175 and from Chaucer's "Yet wole I telle it, though myn herte breste" (from *Troilus and Criseyde*, Book I) to the most banal pop song six hundred years later, hearts

have been breaking, cracking ("My old heart is crack'd, is crack'd!" cried Lear), and wilting under the strain.

Which is odd, for the Elizabethans and Jacobeans regularly used the Greco-Roman notion of loving with the liver familiar since Homer. In *The merry wives of Windsor*, when Pistol is asked whether he loves Ford's wife, he replies: "With liver burning hot". But it's all in the mind, you know. When stimulated, the liver secretes bile, the heart pumps blood, and the brain 'secretes' thoughts including those of love. It is a fallacy so longstanding as to be incapable of eradication that the heart can be tough, loyal, can be eaten or — best of all — that the woman who no longer seeks you out either 'has no heart' or 'has given it to somebody else'. To say that nobody believes all this nonsense *literally* is beside the point: such errors and ambiguities lead to other woolly, uncritical thoughts, and then to grosser errors, such as a 'patriotic' appeal to declare war, or to victimise racial minorities.

Heartburn is a pain totally unconnected with the heart, incidentally. It is caused by excess acid in the stomach, and can be relieved by taking in moderation an alkali such as bicarbonate of soda.

AS HEAVY AS LEAD

It is frequently believed, following the saying that something is 'as heavy as lead', that lead must be the heaviest element. In fact, 'heavy' is the wrong adjective to use in this context: the correct word is 'dense'. The densest element known, since its discovery in 1804, is in fact osmium (22·59 grams per cubic centimetre), so one should more accurately be saying 'as dense as osmium'.

Platinum, uranium and tungsten are also all 'heavier than lead'!

HEBREW WAS THE ORIGINAL LANGUAGE OF MANKIND

The latest citation of the above fallacy in volume 1 was 1859. Since then I have discovered it in John Wesley Etheridge's *The Targums of Onkelos and Jonathan ben Uzziel* (2 vols., London, 1862–5).

Similar errors involve the idea that the Jews are "the

progenitors of mankind; and the Pentateuch the foundation of all literature, and so forth”.

Source: Richard F. Burton, *The Gold-Mines of Midian and the ruined Midianite cities* (Cambridge, 1979).

BRIDGET BRUNGATE AND THE STONE HEDGEHOGS

Laurence Jordan, in *Apparitions of the North-West* (Manchester, 1887), recorded that after a heavy hailstorm at the Lancashire house where she was employed as a maid, the Irishwoman Bridget Brungate claimed that the hedgehogs in the garden had been turned to stone. The tale appeared in newspapers and magazines of the time, and still crops up as a sober fact, but the local sculptor W. Groble later admitted that the hedgehogs had been carved by him and placed in the garden from which he himself had earlier removed live hedgehogs.

Source: *Liverpool Post*, 18 December 1895.

HELEN OF TROY WAS ABDUCTED BY PARIS

‘Everyone knows’ that Helen, wife of Menelaus, was abducted by Paris. Andromache curses Helen with the words: “The beauty of your glance has brought / This rich and noble country to a shameful end”.

In Euripides’ *Trojan women* (lines 368 ff.), Cassandra states that the war was caused by the folly [a euphemism for the imperialistic zeal] of the Greeks, and Helen herself freely admits (l. 946) that she eloped with Paris of her own accord.

Vellacott sums up the situation thus: “Euripides shows how the precise interest of an intellectual theory, and the helpless anguish of a human being, both contribute to that Greek propensity for fixing the blame on some convenient scapegoat, which demonstrated itself in innumerable cruelties throughout Greek history and, as Thucydides observed, reached a new level of atrocity in the Peloponnesian War”.

Source: Philip Vellacott, *Ironic drama: a study of Euripides’ method and meaning* (Cambridge, 1975, pp. 136–46).

A HIGH BROW IS THE SIGN OF INTELLIGENCE AND NOBLE BIRTH

The descriptions ‘highbrow’ and ‘lowbrow’ have recently been

joined by 'middlebrow' to indicate various levels of intellectual calibre: a 'highbrow' journal, a 'lowbrow' newspaper, a 'middlebrow' radio programme. The implication is that a low forehead is reminiscent of our remote apelike ancestor. Like all such assertions, it can be proved wrong only by testing. Karl Pearson and many others since have proved it wrong by testing. In his pioneering paper 'Relationship of intelligence to size and shape of the head and other mental and physical characters' (*Biometrika*, 1906), Pearson reported the examination of head form in 1,010 students of the University of Cambridge, a further 2,200 schoolboys aged 12, and 2,100 other schoolboys. Having ascertained their intellectual levels from their teachers and scholastic records, he found no correlation whatsoever between head form and intelligence. Subsequent tests have supported Pearson. It is worth pointing out that the data collected by Pearson may not have been totally reliable individually, but *en masse* it is likely that variations and errors would have cancelled each other out.

HIPPOMANCY

The ancient Celts, who are believed to have kept white horses in sacred groves, drove them after the sacred chariot, and auguries were made from the horses' attitudes and progress. German tribesmen kept similar horses in their temple compounds, and judged the outcome of a war by which horse's foot crossed the threshold first. If it was the left hoof, the omen was interpreted to be evil, and the war was not undertaken.

The wide interpretation of the 'threshold' idea naturally gave the priests ample scope for prior consultation with the peace party and the war party: there was seldom — as throughout history — opportunity for appeal against the priestly edict.

Before readers scoff at the fallacy of hippomancy, can they conscientiously assert that they have never used such an augury-system, even of the 'she loves me, she loves me not' variety?

HOCK IS A WINE FROM THE RHINE

Hock as a name for a German wine is an abbreviation for 'hockamore', a garbled anglicism for Hochheimer, and otherwise known in Shakespeare as 'Rhenish'.

Hochheim, its place of origin, is actually on the river Main, however, and the growth of 'Rhenish' to describe all the wines from Hochheim as well as from the Rhine valley is a common error.

Source: Ivor Brown, *I give you my word* (London, 1945).

HONEY IS A POWERFUL CURATIVE

Honey is a compound of about 76.5% sugar and about 23% water, with traces of minerals and vitamins but in insignificant quantities. That fact does not prevent cranks from claiming honey as a curative for all kinds of illness and disease, as well as an aphrodisiac. Benjamin Walker, in his *Encyclopedia of metaphysical medicine* (London, 1978), affirms that "Honey, from the honey bee, used both as a food and drink, is regarded as a superlative sex invigorator, especially if mixed with pepper", despite a total absence of evidence for the absurd fallacy.

But those with honey bees in their bonnet will fly straight for a book which will apparently make solid their wildest fantasies. Cecil Tonsley's *Honey for health* (London, 1969) goes so far as to report without irony an allegation that a gangrened foot had been cured by tying it inside a bag of honey. No medical explanation is offered for the purported miracle. Needless to say.

HORATIUS COCLES AND TWO OTHER ROMANS HELD THE BRIDGE

Lord Macaulay, in *Lays of ancient Rome* (London, 1842), told again the story of

"How well Horatius kept the bridge
In the brave days of old".

But he held nothing at all, for the tale is a heroic legend drawn from Livy, and has no basis in fact.

Macaulay described how Horatius Cocles ('the One-eyed') and two other Romans held a bridge against an advancing Etruscan army led by Lars Porsena until the Romans had succeeded in demolishing the bridge. With the job nearly complete, Horatius ordered his companions to go back. When the bridge finally crashed down, Horatius went down with it, but succeeded in swimming across to the Roman-held bank on the other side of the Tiber.

H. R. Allport, in *Macaulay* (1917), elaborates: "Can we be fairly asked to believe that the Romans, after ample warning, would make no preparation whatever to defend their city till the enemy was within two miles, or that a vast army, burning for revenge and plunder, would permit itself to be kept at bay by three men who could have been destroyed in a moment by a few darts and arrows? The other lays are more happily constructed".

HOROSCOPES IN DIARIES

Michael Watts, of the London *Sunday Express*, has drawn attention to the hilarious error in the *Ladies Diary* discovered by Mrs Ann Palmer, of Ash, near Aldershot.

Mrs Palmer checked on her horoscope (Libra) in the 1977 diary and found that it read "You are an excellent organiser and may find yourself concerned with local affairs. Take care this year that you do not overwork. You will have a full social life which you will enjoy immensely". Mrs Palmer recollected reading something like that before. The Libra horoscope in the 1976 *Ladies Diary* ran: "You are an excellent organiser and may find yourself concerned with local affairs . . . ", word for word identical with the new horoscope. So were all the others. Michael Watts challenged the publishers of the diary, T. J. & J. Smith, who told him: "To our horror you're right. The predictions from the 1976 diary have been used again this year by mistake. We've sold many, many thousands already, but nobody has spotted the error until now. However, all our diaries contain a clause which says: 'Whilst great care has been taken in compiling the information in this diary, the publishers cannot accept responsibility for any errors'".

"Still", concludes Michael Watts, "you ladies might as well follow that horoscope advice in your 1977 diaries, and believe the predictions. For they are just as likely to hold true for this year as for last. Or not, as the case may be."

APPRECIATING THE HUMANITIES NECESSARILY MAKES ONE MORE HUMANE

The traditional defence of the humanities in schools, colleges, and universities is that they widen and deepen our sympathies. The late F. R. Leavis of Cambridge passionately advocated English studies as the core of any syllabus in order

to strengthen these sympathies and Henry Sidgwick saw the function of literary study as the apprehension of 'noble, subtle and profound thoughts, refined and lofty feelings', seeing in literature the 'source and essence of a truly humanizing culture'. The argument runs that we shall be more humane after we have absorbed Dostoevsky's *Crime and punishment* and Goethe's *Faust*. Matthew Arnold's idea of poetry as a vital substitute for religious dogma found its 20th-century parallel in Leavis's view of the study of English literature as the 'central humanity'.

In some instances this may be so, but George Steiner is only one of many sceptics: "The simple yet appalling fact is that we have very little solid evidence that literary studies do very much to enrich or stabilize moral perception, that they *humanize*. We have little proof that a tradition of literary studies in fact makes a man more humane. What is worse — a certain body of evidence points the other way. When barbarism came to twentieth-century Europe, the arts faculties in more than one university offered very little moral resistance, and this is not a trivial or local accident. In a disturbing number of cases the literary imagination gave servile or ecstatic welcome to political bestiality. That bestiality was at times enforced and refined by individuals educated in the culture of traditional humanism. Knowledge of Goethe, a delight in the poetry of Rilke, seemed no bar to personal and institutionalized sadism."

Sources include: George Steiner, *Language and silence* (London, 1967).

THE HUNDRED YEARS' WAR LASTED FOR A HUNDRED YEARS

It might seem obvious to call a war by the length of time from beginning to end, but the Hundred Years' War between England and France lasted from 1337, in the reign of Edward III (the first action being a naval battle off Sluys), until 1453, in the reign of Henry VI (the last action being the battle of Castillon). The cause of the 'war', which was really an interrupted sequence of shorter wars, was the claim by England to the crown of France. The result was that the English were expelled from the whole of France except Calais.

‘HUSBAND’ ORIGINALLY MEANT A MARRIED MAN

When Sir John Paston wrote to his mother, in 1475, that “I purpose to leeffe alle heer, and come home to you and be your hosbonde and balyff”, he was merely using the term ‘husband’ in its true sense of a man who managed a household, as its head. *Hus* is the Anglo-Saxon for ‘house’ and ‘bondi’ the Old Norse for ‘freeholder’ or ‘yeoman’.

We retain the original sense of the word in the verb ‘to husband’ (*sc.* one’s resources) and the abstract noun ‘husbandry’. A husband need not be married at all.

‘HYPOTHESES NON FINGO’

Newton did *not* mean that he avoided using hypotheses at all, but that he avoided *fictitious* hypotheses. His stated method (which of course he did not always follow) was to derive hypotheses from the data at hand and then to verify them by further observation or appropriate experiment.

I

“If one understands principle clearly, one will be happy to follow it. One’s first task, then, is to investigate principle to the utmost. It does not matter whether one does it through study, reading books, investigating history, or handling human affairs, and it does not matter whether one studies one thing deductively or many things inductively. When enough effort has been made, one will achieve a thorough understanding. When that is done, one will see the distinction between right and wrong and abandon all superstitious beliefs in spiritual beings and immortals”.—*Reflections on things at hand: the neo-Confucian anthology* (New York, 1967).

THE WORD ‘IDIOT’ ORIGINALLY MEANT ‘MENTALLY DEFECTIVE’

The Greek *idiótes* denotes a private person, as opposed to someone fulfilling a public office. But, in ancient Greece, it was considered indispensable for the individual to obtain experience of public life, as part of his education. Those unqualified to take part in public life, whether mentally incapable, or simply untaught, were known as ‘idiots’.

English writers understood the word in its original sense right up until the seventeenth century. Jeremy Taylor (1613–67), who was at Caius College, Cambridge, wrote for example: “It is clear, by Bellarmine’s confession, that S. Austin [sc. Augustine] affirmed that the plain places of Scripture are sufficient to all laics, and all *idiots* or private persons” (*A dissuasive from Popery*).

INDIAN INK COMES FROM INDIA

The *Oxford English Dictionary* defines ‘India ink’ or ‘Indian ink’ as “a black pigment made in China and Japan sold in sticks; understood to consist of lampblack made into a paste

with a solution of gum and dried. More accurately called *China ink*".

It is not clear how the designation 'Indian' arose, but Pepys used it in his diary entry for 5 November 1665: "Mr Evelyn, who . . . showed me most excellent painting in little, in distemper, India incke, water colours".

IT WAS C. G. JUNG WHO FIRST DIVIDED HUMAN PSYCHOLOGICAL TYPES INTO THE INTROVERT AND EXTRAVERT

Frieda Fordham, in *An introduction to Jung's psychology* (Harmondsworth, 1956), describes how "Jung's division of people into extraverts and introverts has already come to be widely known, if not fully understood". But this division did not originate with Jung at all. In *Sense and nonsense in psychology* (Harmondsworth, 1958), H. J. Eysenck is at pains to state: "It would be wrong to credit Jung with the discovery of this personality dimension. The very terms extraversion and introversion can be found as far back as the sixteenth century, and in more modern times the English psychologist Jordan and the Austrian psychiatrist Gross both anticipated Jung in putting forward theories very similar to his". Eysenck's list of typical introverts includes Hamlet, Sherlock Holmes, Robespierre, Savonarola, Spinoza, Cassius, John Stuart Mill, the March Hare, Sir Stafford Cripps, Faust, Cato the Elder, Don Quixote, and Kant. Examples of extraverts are Mr Pickwick, Bulldog Drummond, Boswell, Mr Punch, Caliban, Dumas, Donald Duck, Churchill, Pepys, Cicero, Falstaff, and Toad of Toad Hall.

It is only fair to Jung to stress that he also postulated the existence of a continuum from extraversion to introversion on which all human beings could be placed. The extravert is a person valuing the outer world in its material and immaterial aspects (wealth and the goods it can buy; power and the influence it can bring), who makes friends easily, and who tends to trust others. The introvert tends to distrust his fellow-man, makes friends only with great difficulty, and spends much of his energy in mental and intellectual exercise.

IRIDOLOGY

This fallacy, also known as iridiagnosis, is still widely practised, despite the availability of such expository texts as

Henry Lindlahr's *Iridiagnosis and other diagnostic methods* (1917) and Bernard Jensen's equally intriguing *Science and practice of iridology* published from the Hidden Valley Health Ranch, Escondido, California in 1952.

Iridology was founded by a Budapest doctor called Ignaz Peczely, who published a book in 1880. Lindlahr's account is that Peczely founded the science of iridology at the age of ten when he broke an owl's foot. "Gazing straight into the owl's large, bright eyes", explains Lindlahr in presumably hushed tones, "he noticed at the moment when the bone snapped, the appearance of a black spot in the lower central region of the iris, which area he later found to correspond to the location of the broken leg". One will not insult the reader's intelligence by asking searching questions of this hearsay testimony of a ten-year-old's opinion of an owl's broken foot. But it is worth asking, as Martin Gardner feels obliged to ask, in *Fads and fallacies in the name of science* (2nd ed., New York, 1957), why J. Haskell Kritzer, in his *Textbook of iridiagnosis* (5th ed., 1921), feels it necessary to explain how to recognize artificial eyes, so that long diagnoses of these cause no embarrassment!

Iridology is based on the fallacy that the iris is divided into some forty 'zones' running clockwise in one eye and anti-clockwise in the other, and that these zones are connected by nerve filaments to various parts of the body. These filaments are, however, not detectable by anatomists. Iridiagnosticians claim to be able to diagnose disease by looking at spots on the eyes, called for some reason 'lesions'.

A fashionable word in current iridology is 'sanpaku', immortalised in Sakurasawa Nyoti's *You are all sanpaku* (New York, 1970). The feeling is that, if you check the state of your iris in time, you may be able to convert your diet to **MACROBIOTICS** (*q.v.*), and thus prevent premature decease. 'Sanpaku' is a condition in which the white of the eye is visible between the lower lid and the pupil, denoting serious physical and/or spiritual illness. 'Sanpaku' sufferers sleep badly, have difficulty in thinking, bad memories, and sexual impotence.

Iridology is one of the **ZONE THERAPIES** (*q.v.*).



“The Judgement of man is fallible” — PUBLIUS
OVIDIUS NASO, *Fasti*, Book V.

JEHOVAH'S WITNESSES

The Society for the Promotion of Christian Knowledge is unreliable on the count of bias when dealing with the field of Protestantism, but it has produced useful documents on fallacies in other fields, such as Christian Science, Astrology, and Spiritualism. One pamphlet, by K. N. Ross, deals with *Jehovah's Witnesses* (London, 1954) and concludes that “Jehovah's Witnesses are tied to a system of chronology which no educated person could defend for a moment. And they are tied to a system of theology which is equally indefensible”.

To take first the system of chronology, the Witnesses' widely-distributed publication *New Heavens and a new Earth* (1953) includes the following assertions. “There was no dry land on the earth 34,000 years ago; everything was covered by water. 20,000 years ago there was no life of any kind on this planet. Fishes and birds were the first living things, but there were no animals or reptiles whatever until after 11,025 B.C., and man appeared on the earth for the very first time in the autumn of 4025 B.C.”

K. N. Ross terms this ‘fantastic nonsense’, and asks the following rather significant questions: “Has there not recently been discovered a coelacanth, a fish which has been estimated to go back to 60,000,000 years? Is there any geologist who will not say that reptiles and land-animals appeared on the earth before the first birds? Is there one who will not say that living creatures existed with the first kinds of vegetation? Will anyone challenge the fact that human remains go back 300,000 years? . . .

Scholars now regard the chronology of Genesis as artificial and conventional, and not historically true, just as the account (or accounts) of creation itself is now seen to belong to the realm of religious folklore and myth”.

The Witnesses, founded by the American Charles Taze Russell (1852-1916) as the International Bible Students, and now known formally as the Watch Tower Bible and Tract Society, Inc., state that "Man was created in 4025 B.C.". But fossil man is known on Earth as long ago as 300,000 B.C., and new finds are constantly increasing our estimate of man's period of existence on Earth. They also believe that the entire human race, apart from eight individuals, was drowned in the Flood of Noah which they date to 2370 B.C. As K.N. Ross states: "there is plenty of monumental evidence, from Babylonia as well as Egypt, of continuous civilization without a break throughout the whole of the third millennium before Christ".

The Witnesses' ignorance of the course of terrestrial evolution is exemplified by a pamphlet entitled *Evolution versus the New World* (New York, 1950): "God used no evolution. He did not make man from a monkey or other previously created animal. He went directly to the dust, from it made the body of a mature man, and breathed into it the breath that set the life processes into operation". The slogan of the Witnesses runs to the effect that "Millions now living will never die", but like similar millenarian and adventist sects, the Witnesses stand only to lose further credibility as their deadlines for the end of the world pass without calamity. Russell predicted the Second Coming in 1874 for example. Then, when that year passed without the Kingdom of God's being accomplished, he predicted it for 1914. In 1925, Abraham, Isaac and Jacob would return to Earth — so a large mansion awaited them in California. When that year passed by without news, the year 1976 was appointed as the end of Christendom and the beginning of the Kingdom of God. We have lived to see that year pass too.

The effectiveness of the Watchtower Bible and Tract Society, Inc., in obtaining converts has never been in doubt, and no amount of ridicule or disproof seems to impress them. In the words of *The Oxford Dictionary of the Christian Church* (London, 1957), "they carry on an effective propaganda among an uncritical public and attract especially the dissatisfied elements of society by preaching hatred of all existing institutions. During the war of 1939 to 1945 they were suppressed in several countries, e.g. Australia and New Zealand, as a subversive organization. They can hardly be regarded as a religious society, since, according to [J. F.]

Rutherford's own statement, they hold that 'religion is against God'."

Sources include: F. L. Cross (ed.), *The Oxford Dictionary of the Christian Church* (London, 1957); and K. N. Ross, *Jehovah's Witnesses* (London, 1956).

JESUS WAS BORN IN 4 B.C.

Even if one disagrees with the contention of those, like G. A. Wells (*Did Jesus exist?*), who believe that Jesus Christ never actually existed, it is almost impossible to agree with the commonly-held views that he was born exactly 1980 years before 1980 Anno Domini, or that he was born in 4 'Before Christ', a paradox that is nevertheless widely believed. Dean Inge, in *Outspoken essays* (London, 1921) asserted that "Jesus was born at Nazareth about four years before the Christian era", and this folklore represents the popular view in the 19th and early 20th centuries.

Stuart Campbell of Edinburgh has kindly provided the following comments: "The Christian dating system was established in the 6th century by a Greek monk, Dionysius Exiguus, who sensibly used Luke's claim that Jesus was 30 years old when he began to preach. If John had begun his preaching one year before Jesus, and that was Tiberius' 15th year (again according to Luke), then the terminal year is correct, Tiberius' 15th year being 29 C.E.

But those who believe in the historicity of the Massacre of the Innocents at Bethlehem, and believe that the Herod who ruled at the time of Jesus' birth was Herod the Great, must put back the date of birth at least to 4 B.C., when this Herod died. But Herod was a family name, and both the sons of Herod the Great, Antipas and Archaelus, also bore the name 'Herod'. Thus the Gospel's reference to 'Herod the King' is not sufficient evidence to justify the conclusion that the king in question was Herod the Great himself.

Furthermore, if one wishes to harmonise the date of Jesus' birth with the story of the census, then the event must be moved *forward* to 6 C.E., when Sulpicius Quirinius conducted the assessment of Judaea, upon the assumption by Rome of direct rule over that province. The association of Jesus with this assessment was probably contrived by someone anxious to find a reason to move Jesus to Bethlehem for his birth (in

fulfilment of prophecy). In fact the Roman assessment did not require such movement of population.

There is also the question of the 'star of Bethlehem'. Ignorant of the myth-creating ability of ancient writers, particular when they had a religious motive, astronomers regularly attempt to find natural explanations for this 'event'. We have heard of planetary conjunctions, super-novae, comets, and other phenomena, but none, unfortunately, occurs in the terminal year (see David W. Hughes, 'The Star of Bethlehem', in *Nature*, vol. 264, 9 December, 1976, pp. 513-7, and relevant correspondence in vol. 268, 11 August 1977). See **THERE WAS A STAR OF BETHLEHEM**. Consequently, more reasons are found for suggesting that Jesus was not born in the terminal year. There is in fact no good reason for supposing that any unusual celestial events took place at the time of the birth of Jesus. Such associations were later inventions, albeit based on some notable astronomical occurrence".

The date of birth given in *The Oxford Dictionary of the Christian Church* (London, 1957, p. 723) is 'not more than three or four years before' the death of King Herod the Great (4 B.C.). The *Catholic Biblical Encyclopedia* (New York, 1949, p. 76) comes down in favour of 8 B.C.

As regards the exact month and day, it is not until the Philocalian calendar of 336 that the date 25 December is found. St. Clement of Alexandria (150-211/6) seems to be the first to refer, in an extant passage, to a specific celebration of Christmas. Writing between 208 and 211, he says that, while some favour April 19 or 20 or May 20, St. Clement prefers November 20 (*Stromata*, 1, 21).

A treatise composed in 243, *De Pascha Computatus* (wrongly attributed to St. Cyprian of Carthage), dated the birth of Jesus to 28 March.

K

“Knowledge is the only fountain, both of the love and the principles of human liberty”. — DANIEL WEBSTER, *Address delivered on Bunker Hill*, 1843.

KARDEC AND THE RISE OF SPIRITISM

The ‘spiritism’ of Allan Kardec (the pseudonym of Léon Dénizard Hippolyte Rivail) differs from spiritualism in making a dogma of reincarnation, and has always been more popular in France and recently more especially in Brazil, while spiritualism (not requiring a belief in reincarnation of its faithful) has been more fashionable in Britain and the U.S.A.

Rivail was a schoolmaster who toyed with **ANIMAL MAGNETISM** (q.v.) before he was introduced to the world of mediums by Victorien Sardou. Rivail soon ‘communicated’ with the dead, among whom were a certain ‘Allan’ and ‘Kardec’, names which he chose to adopt thenceforth as his own. Rivail wrote widely on his experiences, and the 2nd (Paris, 1857) edition of his *Livre des esprits* has become standard reading for spiritists. The book was translated at *The spirits’ book* (London, 1875), by Anna Blackwell, one of his few sympathisers in Britain.

In societies such as those of the poverty-stricken Roman Catholic nations of Latin America, Kardecism drew support for its theories of infinite reincarnation (even within the spirit world, to a state of pure ineffable spirit), and its claim to supersede the organized religions of Moses and Jesus Christ. In his *Imitation de l’Evangile selon le spiritisme* (Paris, 1864), Kardec envisaged spiritism as a new world religion. One of its major fallacies (apart from those involving reincarnation, and communication with the dead) is the dogma that it is possible for unqualified and unskilled ‘doctors’ to receive instructions on how to treat patients from the spirits of deceased doctors and surgeons. [See **THE MIRACULOUS CURES OF ZE ARIGÓ**]. Such a fearsome error is always liable to spring up

in areas lacking adequate medical and surgical facilities — an area such as rural Brazil, say, or the rural Philippines [see **PHILIPPINE PSYCHIC SURGERY**].

Governments have a duty to stamp out such irrational and ignorant practices, but their *first* duty must be to provide adequate medical facilities. As long as they do not do so (and as long as their educational system provides so little nourishment that errors can flourish unchallenged), the errors of this generation will go forward to the next, and multiply.

Sources include: James Webb, *The flight from reason* (London, 1971).

THE KEELY MOTOR

Perpetual motion (see volume 1) is a mirage that many inventors have seen but never reached. The confidence trickster John E. W. Keely defrauded the public with an essay on the perpetual motion machine which he called ‘a vibratory generator with a hydropneumatic pulsating engine’, which is nonsense for a machine allegedly able to run on air, water and a motor to produce a “vaporic substance . . . having an elastic energy of 10,000 pounds to the square inch . . . It is lighter than hydrogen and more powerful than steam or any explosives known . . . I once drove an engine 800 revolutions a minute of forty horse power with less than a thimbleful of water and kept it running fifteen days with the same water”.

This prodigious machine was first demonstrated in Philadelphia in 1874, and quickly attracted admirers (among whom were the leading theosophist Mme. Helena Blavatsky [see **THE ODIC FORCE**]), and investors. The spiritualists claimed that it ran on aetheric force (the *Vril* invented by Edward Bulwer-Lytton in his novel *The Coming Race*, 1871). Tests were always carried out in Keely’s home, and involved such feats as requiring the motor to tear ropes asunder, and twist iron bars. The apparent source of energy to fuel the motor was one pint of water. Scientists were not allowed to inspect the motor, which is really just as well for Keely and the spiritualists, for after Keely’s death in 1898 it was discovered that the fraudulent ‘inventor’ was powering his motor from compressed air equipment in his cellar.

Despite Keely’s exposure, so many people believed in his miraculous machine that Frank Edwards could write as late

as 1959: "The secret of Keely's mystery motor died with him. Scientists could never agree on how it had operated"!

Sources include: Frank Edwards, *Stranger than science* (London, 1959); Charles Fort, *Wild talents* (New York, 1975); Daniel Webster Hering, *Foibles and fallacies of science* (London, 1924); and Curtis D. MacDougall, *Hoaxes* (New York, 1958).

HELEN KELLER WAS BORN BLIND, DEAF, AND DUMB

There is a widespread belief that the blind deaf mute Helen Adams Keller (1880-1968) was born with all her disabilities, but in fact she was born entirely normal.

It was in 1881 that the infant was struck by what may have been scarlet fever, from which she recovered with so many faculties tragically impaired. The gradual acquisition of her independence, with the loving aid of Anne Sullivan Macy, Polly Thompson, and Winifred Corbally, is one of the most inspiring examples of the power of the human spirit to transcend physical handicaps. Mark Twain remarked: "The two most interesting people of the last one hundred years are Helen Keller and the Emperor Napoleon Bonaparte".

Sources include: Helen Keller, *The story of my life* (New York, 1954); and Richard Harpity and Ralph G. Martin, *The three lives of Helen Keller* (New York, 1962).

KRAKATOA IS EAST OF JAVA

The volcanic island forming the subject of the film *Krakatoa, East of Java*, directed by Bernard L. Kowalski in the late 1960s, is not of course east of Java at all.

A glance at the map of Indonesia shows that the island (properly spelt Rakata) lies at latitude 6° 11' S. and longitude 105° 26' E., that is of course *west* of Java. The film is melodramatic and over-romanticised, glossing over the real horror when more than forty thousand people lost their lives in the eruptions of 1883.

L

“Learning without thought is lost; thought without learning is dangerous”. — CONFUCIUS, *Analects*.

WINSTON CHURCHILL WAS PRESENT AT THE FIRST RELIEF OF LADYSMITH

As a correspondent of the *Morning Post*, the young Winston Churchill described the first relief of Ladysmith as an eyewitness, but Thomas Pakenham, in *The Boer War* (London, 1979) proves that Churchill was miles away from Ladysmith at the time.

LASERS ARE ANTI-GRAVITY DEVICES

Light amplification by stimulated emission of radiation (LASER in acronym form) makes light appear to be made up of long stretches of waves of even amplitude and frequency (coherent light) because the photons are of the same size and move in the same direction, so the wave packets are all of the same frequency and ‘lined up’ in such a way as to ‘melt together’.

But not if you believe John Fenn Smith. According to his book *The laser* (London, 1971), what lasers *really* are, are anti-gravity devices. They prove that time does not exist. John Fenn Smith goes on to define gravity as the respiration of energy particles normally hidden inside atoms. Since the first successful laser was constructed only as recently as 1960 (by the American physicist Theodore Maiman), it can be seen that fallacies are multiplying in correlation with the speed of invention and discovery.

JESUS AND THE DISCIPLES SAT DOWN AT THE LAST SUPPER

Probably the most famous depiction in art of the story told in Mark, Matthew and Luke of the Lord’s Supper, also known as the Last Supper, is the wall-painting in oil tempera by

Leonardo da Vinci still to be seen adjoining the damaged Church of Santa Maria delle Grazie in Milan. It was painted in 1495-8, and shows Jesus and his disciples seated around a table.

Sir Thomas Browne, in *Pseudodoxia Epidemica* (London, 1646), put the record straight, even if he went unheeded. "Concerning the pictures of the Jews, and Easterne Nations at their feasts, concerning the gesture of our Saviour at the Passeeover, who is usually described sitting upon a stoole or bench at a square table, in the midst of the twelve, many make great doubt; and though they concede a table jesture will hardly allow this usuall way of Session. Wherein restrayning no mans enquiry, it will appeare that accubation, or lying downe at meales was a gesture used by very many nations. That the Parthians used it, is evident from Athenaeus, who delivereth out of Possidonius, that their King lay downe at meales, on an higher bed then others. That Cleopatra thus entertained Anthonie, the same Author manifesteth when he saith, shee prepared twelve Tricliniums".

Not only was the triclinium in almost ubiquitous use around the Mediterranean at the time of Jesus Christ, but we can actually see what the Last Supper may have looked like, with the use of triclinia, in a mosaic datable to 520 to 526 still to be seen at Sant' Apollinare Nuovo, Ravenna.

LEFTHANDEDNESS IS UNNATURAL

A fallacy in the categories 'those who do not do as I do must be wrong' and 'the majority must be right because the majority is always right'. The former fallacy presumably needs no explanation, for it is observed daily in all walks of life by most people whose guiding first principle is not tolerance of others. The latter is exemplified by the mutually contradictory 'facts' that 'Hinduism must be the true religion because it is held by a majority of Indians' and 'Hinduism cannot be the true religion because it is not held by a majority of the human race'.

Lefthandedness is in fact as natural to lefthanded people as homosexuality is natural to homosexuals. Those anxious to derive the derogatory meaning of English 'sinister' directly from the original meaning of the Latin 'sinister' ('left', 'lefthanded'), are wrong according to the *Oxford English Dictionary*. The English word derived first from the

transferred meaning ('inauspicious', 'unfavourable'), and acquired the meaning 'left' only later, and less commonly.

Sources include: Martin Gardner, *The ambidextrous universe* (London, 1967).

LEPROSY EXISTS ONLY IN THE MIND OF THE LEPER

It is a common fallacy within Christian Science and other faith-healing systems that diseases such as leprosy do not exist materially, but only in the mind of the sufferer.

Susan Morrison, in 'Challenge those beliefs!', an article in the *Christian Science Sentinel* for 3 October 1977, observes: "Freeing ourselves from false believing is a vigorously active process; it requires unceasing alertness". But if a Christian Scientist were really to free herself from false believing (such as inconsistency or contradiction of the empirically proven), she would no longer regard the *Science and health* of Mary Baker Eddy as a holy book to be quoted like Scripture.

Ms Morrison's demonstration of the truth of Christian Science takes the form of a garbled version of the healing of Naaman's leprosy (from II Kings 5: 1-14): "Naaman, captain of the king of Syria's army, was a great and honorable man, but he suffered from leprosy. It appears he not only accepted and believed in the conditions of this disease but also had strong views as to how it could be healed . . . Naaman accepted the belief in leprosy as a reality, and he experienced the conditions of that belief. The rigidity of belief in his own human greatness took the form of pride; and pride almost prevented the healing from taking place. But obviously, his true goodness lay in other directions — in the fact that his servants felt they could remonstrate with him, in the fact that he listened to them and that there was a shift in his attitude enabling him to make room for enlightenment. Then his willingness to be obedient replaced the limitation of mortal supposition. The result was dramatic: a complete and immediate release from all the conditions attached to the belief of leprosy".

But the Naaman tale and other allegedly miraculous cures of leprosy have no basis in fact whatsoever. The disease is not markedly infectious if one avoids intimate personal contact, but to deny its reality shows an uninformed, prejudiced, and

above all an inhuman attitude to suffering. Challenge your beliefs, Ms. Morrison: there are some ailments that the most powerful autosuggestion cannot cure!

W. J. LEVY PRODUCED REPEATABLE PARAPSYCHOLOGICAL RESULTS

Not everyone who followed the contributions of Dr. W. J. Levy (such as 'An automated maze test with random behaviour trials by humans' in *The Journal of Parapsychology*, vol. 38, 1974, pp. 26-46 and prior contributions), realises that the irrevocable proof claimed for the repeatability of his experiments is based on fraudulent practice.

As in most cases of this type, readers tend to be attracted more by initial results of a sensational nature than by subsequent refutation. Those interested should read Dr J. B. Rhine's 'A new case of experimenter unreliability' [note the ominous 'new'] in *The Journal of Parapsychology*, vol. 38, 1974, pp. 215-225.

"Today it seems to me", writes Dr Rhine, "that since it is much more difficult in psi research than in other sciences to secure the verification on which safe acceptance eventually depends, we who want to advance it must adopt a similar rule [i.e. that 'a subject should not be trusted at all; even if he were a priest or the experimenter's best friend, the conditions must be such that cheating would not be possible'.] It would be not to leave anything in our own tests to unsupported faith, nor to accept anything from others on that uncertain basis".

It is clear from the above that Dr Rhine still sides with those who want 'to secure the verification on which safe acceptance eventually depends', but in a true science — which parapsychology has not yet become and may never become — the experiments are designed to discover *what actually happens*, not to prove that *something actually happens*. So many hundreds of thousands of psi tests have taken place, that failure of verification and fraudulent practices must surely represent a mounting pressure of conviction that *nothing actually happens*.

FALLACIES OF LIBERALISM

The god that failed (New York, 1950), edited by Richard Crossman, is an important collection of essays by Arthur

Koestler, Ignazio Silone, Richard Wright, André Gide, Louis Fischer, and Stephen Spender. The book examines in some detail the state of mind of Western intellectuals who converted to Marxism in the period 1917-39, but subsequently left the flock, "when each discovered", to quote Richard Crossman, "the gap between his own vision of God and the reality of the Communist State — and the conflict of conscience reached breaking point. A very few men can claim to have seen round this particular corner in history correctly. Bertrand Russell has been able to republish his *Bolshevism: practice and theory*, written in 1920, without altering a single comma; but most of those, who are now so wise and contemptuous after the event, were either blind, as Edmund Burke in his day was blind, to the meaning of the Russian Revolution, or have merely oscillated with the pendulum — reviling, praising, and then reviling again, according to the dictates of public policy".

The fact is that no system of thought, dogma, or way of life can be wholly perfect or imperfect. One recalls the anti-Communist witch-hunts of the late Senator McCarthy with no less fear and loathing than the pro-Communist witch-hunts of Stalin and his prison-camps. The danger in the West is that we do not often choose to examine the fallacies of liberalism.

Richard Crossman writes: "The intellectual attraction of Marxism was that it exploded liberal fallacies — which really were fallacies. It taught the bitter truth that progress is not automatic, that boom and slump are inherent in capitalism, that social injustice and racial discrimination are not cured merely by the passage of time, and that power politics cannot be 'abolished', but only used for good or bad ends".

Liberalism may be the best system — or one of the best — for government at national or local level, but it is fallacious to assume that it has no inherent or associated faults.

TO BE LICKED INTO SHAPE

It was a common error throughout much of human history that kittens, puppies, fox-cubs, bear-cubs and indeed all young are born formless, and the mother's first task is to 'lick them into shape'.

It is only comparatively recently that the general public has come to be persuaded that the infant has its limbs, body, and head in miniature, and that the licking process is a combination of washing and sheer maternal affective contact.

LIFE WAS CARRIED TO EARTH BY METEORITES

Anyone who greatly enjoyed David Attenborough's BBC Television series *Life on Earth* and the book based on it will be puzzled by *Lifecloud* (London, 1978) a book by Fred Hoyle and N. C. Wickramasinghe. The eminent authors argue that life did not begin here on Earth at all, but a primitive biological system evolved in interstellar space and was carried to Earth, and probably to other planets, by meteorites.

A symposium entitled 'Life-forms in meteorites' appeared in *Nature* for 24 March 1962, but generally scientists — while keeping an open mind — have not been impressed by claims for this particular theory of the origin of life. In the late 19th century, the German Otto Hahn examined a number of meteorites and claimed that they contained tiny fossilized organisms. Though his findings were challenged, in late 1961 several carbonaceous chondrites were examined by Professor Nagy and Dr Claus of New York, who reported a very large number of microscopic fossils in two meteorites. Confirmation of the Nagy and Claus findings has been disputed; there is also the problem that *all* organic-containing rocks are notorious for containing mineral structures that resemble fossils but are not in fact fossils.

Professor Harold Urey has suggested that the carbonaceous chondrites are fragments of the black region of Moon's surface that have been knocked off by collision with other meteorites, such as siderites. Professor Urey further suggests that these black regions are the remains of organic matter carried to the Moon by gigantic splashes from Earth's primitive seas — again caused by the collisions of meteorites!

Soviet scientists have proposed that the impact of the Siberian meteorite was a crashed space-ship.

Dr M. M. Agrest, writing in the Moscow *Literaturnaya Gazeta* in 1959, declared his belief that the Biblical description of the destruction of Sodom and Gomorrah is actually a description of a nuclear explosion, while a rocky platform in Lebanon is not a natural outcrop, but a launching-pad for alien spaceships!

The fallacy is that of proposing far-fetched theories as fully-substantiated scientific hypotheses. One must assume that — unless convincing proof is shown by obtaining new life from a meteor at some time or another — the *Lifecloud* thesis of

Hoyle and Wickramasinghe is very far from proven, and needs experimental verification.

Sources include: Michael H. Briggs, 'Life on other planets', in *The Humanist*, July 1962.

LIONS ARE NOT SCAVENGERS

The popular picture is that of the patient lion, spending hours in pursuit of prey, while hyenas and jackals scavenge the scanty remains of the victim. In fact it is the lioness who usually does the hunting, the kill is often slow and painful (by strangulation in many cases), and the lioness is not above scavenging herself. Both lion and lioness are recorded as having eaten their own cubs, and both occasionally kill indiscriminately, and not only for immediate food.

Source: George Beals Schaller, *The Serengeti lion: a study of predator-prey relations* (Chicago, 1972).

LOCH NESS MONSTERS

Since the discovery of the coelacanth, a 'fossil' still alive, I have been guilty of a bias towards the existence of a 'Loch Ness Monster'. However, the awesome *kraken* turned out to be a giant squid, and the continued failure decade after decade since 1933 to find physical evidence for such a monster's existence has been discouraging to 'believers'. Since 1961 the systematic scientific work performed by the Loch Ness Phenomenon Investigation Bureau has produced insufficient evidence to warrant a revision of Maurice Burton's *The elusive monster* (London, 1961).

Now comes a persuasive argument against the existence of a monster or monsters from Dr T. E. Thompson of the Department of Zoology, University of Bristol. In a recent personal communication he has written: "Unless 'Nessie' is presumed to be immortal, we should expect to find a breeding population of these monsters in the Loch. Such a population must consist of a sizeable number of individuals if it is to be stable; after all, ecologists express legitimate concern for large vertebrates such as rhinoceroses when their numbers fall below a hundred. It is impossible to believe that substantial numbers of large reptiles (as Nessie is usually claimed to be) could exist in the Loch without fairly frequent sightings. This objection is made the more cogent by the fact that reptiles (especially

large reptiles) must breathe air at the surface. Finally, one must remember that the Loch must have been frozen during the recent geological past, and so Nessie's ancestors must have entered the Loch after the subsequent thaw. By what route? There cannot be underground channels connecting the Loch with the sea, because the Loch would drain down to sea level if there were. There is no freshwater connexion to the sea ample enough to submerge even a small monster. And an overland route would be impossible for an aquatic vertebrate of the size and specialisation claimed".

Dr Thompson concludes: "The Loch Ness monster is based on superstitious nonsense. That the myth is perpetuated is largely the fault of opportunistic journalists, but it is regrettable that reputable scientists can occasionally be just as naughty. This is a pity because the general public already has difficulty in disentangling science fiction from science fact".

THE LOOFAH, LIKE THE SPONGE, IS A SEA PRODUCT

The loofah looks like a member of the sponge family, but is totally unrelated. It is in fact the fibrous part of the fruit of one or two species of *Luffa aegyptiaca*, to give it the scientific name by which one can note that it is native to Egypt. It belongs to the order Cucurbitaceae. That is, it is related to the gourd and the cucumber.

It is still found as a bath-sponge, but in the West Indies it has also been used as a type of dish-cloth, and has been worked up into baskets.

'TO LOOSEN' IS THE OPPOSITE OF 'TO UNLOOSE'

The two words mean approximately the same. To loose something is to set it completely free; to loosen it is to make it more loose than it was but not completely free; and to unloose is, to use the *Oxford English Dictionary* definitions: 'to relax, slacken the tension or firmness of (some part of the body, one's grasp or hold, etc.); to set free from bonds, harness, etc.; to release from confinement; to set free for action; to bring into play; to undo, untie, unfasten (a knot, belt, band, bundle, etc.); to detach, so as to get rid of or remove; to become loose or unfastened. *rare*.'

The paradoxical result is that 'to tighten' is the opposite of 'to loosen, but 'to untighten' is the *same* as 'to unloose'.

THE LOST TRIBES OF ISRAEL

Fallacious ideas about the dispersal and survival of the 'lost tribes of Israel' were discussed in volume 1 (p. 134). Others, however, have been supplied by Dr W. Fassbaender of Graz.

The Book of Mormon for instance tells us that the American Indians were Hebrews. Both Oliver Cromwell and Diego de Landa (the latter in a work on Yucatán) believed that the American Indians spoke a variety of Hebrew.

The Church of God and Saints of Christ was founded in 1896 by W. S. Crowdy on the claim that the lost tribes are the present-day negroes. The rival Commandment Keepers define the negroes as tribes of Judah, and claim that the lost tribes of I Kings, II Kings and Esdras are the whites.

It is interesting to note the *Lectures on ancient Israel and the origin of the modern nations of Europe* (Cheltenham, 1840), by the phrenologist John Wilson, who claimed that the British were the children of Israel. The curiosity aroused by Wilson's treatise can be estimated from the fact that in 1844 it reached a third edition.

MAKING LOVE WITH THE USE OF ASTROLOGY

Planets in love: exploring your emotional and sexual needs (Rockport, Ma., 1978) is a book by John Townley published by Para Research Inc., Whistlestop Mall, Rockport, Ma. 01966.

Katherine de Zengotita, reviewing this guide to making love by the expert use of a particular kind of astrology, has said: "This is the latest in a series of astrological reference books by this publisher. The others have been inoffensive, if uninspired. This one, with a long appendix on sado-masochism as a 'road to spiritual transcendence', is offensive *and* uninspired".

Source: *Library Journal* (New York), 1 October 1978.

A CURE FOR LUMBAGO AND RABIES

Pliny, in his *Historia naturalis*, assured us that "medicine made from the hyena, if caught when the Moon is in Gemini, cures bleary eyes, rheumatism, lumbago, ghosts, and rabies".

Now we need to know a cure for taking hyena.

M

“A man may live long, and die at last in ignorance of many truths, which his mind was capable of knowing, and that with certainty” — JOHN LOCKE, *Essay concerning human understanding* (1690), Book I, Ch. II.

MACBETH'S MURDER OF DUNCAN WAS UNPRECEDENTED IN SCOTTISH MONARCHICAL HISTORY

The Macbeth familiar to us all from Shakespeare's tragedy bears little or no resemblance to the figure known to historians from the documentary record. Every playwright has a duty first and foremost to write a good *play*: it is the audience's duty to avoid connecting dramatic form and function with the facts and theories of reputable historians who have access to records unknown to Holinshed, on whose compilation Shakespeare based *Macbeth*.

Macbeth ruled from 1040–57, a good span for a Scottish king in the Middle Ages. He was not regarded as a usurper, as is proved by the fact that he is buried on Iona, the resting-place of legitimate kings.

There were probably at least two attempts to deprive Macbeth of the throne, including those in 1046 and 1054 led by Siward of Northumbria. In 1054, Malcolm was apparently given possession of part of southern Scotland, and this may be the reason why some chroniclers believe Macbeth to have been killed in 1054. Macbeth was actually killed by Malcolm III in 1057, near Lumphanan in Mar and not in his own castle.

Neither did Macbeth kill Duncan in his own castle (Act II. iii. 11, *Lady Macbeth*: “Woe, alas! what, in our house?”). It was at ‘the Smith's House’ near Elgin.

Inevitably, most controversy centres on the bloodiness of the deed, and the connivance of Lady Macbeth, whose part in the plot gave Dmitri Shostakovich the idea for his opera *Lady Macbeth of Mtsensk*, later retitled after the ‘heroine’ *Katerina*

Ismailova. Not only was there no bloody Lady Macbeth in Mtsensk: there was probably no guilty Lady Macbeth of Scotland, either. Macbeth alone should be blamed, but for what?

Macbeth was probably Malcolm II's nephew, writes E. L. G. Stones in *Common errors in Scottish history* (London, 1956, p. 6), and "may well have considered his claim to the throne to be as good as, and probably better than, that of Duncan I". This is substantiated by A. O. Anderson's 'Macbeth's relationship to Malcolm II' in *Scottish Historical Review*, vol. 25, p. 377). Under the earlier system of collateral succession, Macbeth had a double claim to the throne: through his wife, Gruoch, almost certainly a granddaughter of King Kenneth III (997–1005); and through his mother, probably a daughter of King Kenneth II (971–995).

Macbeth's murder of Duncan I was not an isolated act of butchery, but part of a traditional pattern, according to which a king was murdered by a successor of the alternate line. Thus, Dr Stones tells us, "Constantine (995–7) succeeded by the killing of Kenneth II, and was killed by his successor Kenneth III". Kenneth III was murdered by his successor, Malcolm II (1005–1034), Duncan's grandfather. Macbeth's murder of Duncan I, which has been so enormous in the public imagination, was neither more nor less savage than Malcolm III's murder of Macbeth.

Sources include: William Shakespeare, *Macbeth*, ed. by J. Dover Wilson (Cambridge, 1947).

MACHIAVELLI TAUGHT EVIL AND MACHIAVELLIANISM IS AN EVIL DOCTRINE

Lord Macaulay, taking as a pretext for an attack on the erroneous views about Niccolò Machiavelli the 1825 translation of the complete works into French by J. V. Périér, published in the *Edinburgh Review* of March 1827 a delightfully written and scholarly refutation of many such mistakes.

"We doubt whether any name in literary history be so generally odious as that of the man whose character and writings we now propose to consider. The terms in which he is commonly described would seem to import that he was the Tempter, the Evil Principle, the discoverer of ambition and revenge, the original inventor of perjury, and that, before the

publication of his fatal Prince, there had never been a hypocrite, a tyrant, or a traitor, a simulated virtue, or a convenient crime. One writer gravely assures us that Maurice of Saxony learned all his fraudulent policy from that execrable volume. Another remarks that since it was translated into Turkish, the Sultans have been more addicted than formerly to the custom of strangling their brothers. Lord Lyttelton charges the poor Florentine with the manifold treasons of the house of Guise, and with the Massacre of St Bartholomew. Several authors have hinted that the Gunpowder Plot is to be primarily attributed to his doctrines, and seem to think that his effigy ought to be substituted for that of Guy Faux, in those processions by which the ingenuous youth of England annually commemorate the preservation of the Three Estates. The Church of Rome has pronounced his works accursed things. Nor have our own countrymen been backward in testifying their opinion of his merits. Out of his surname they have coined an epithet for a knave and out of his Christian name a synonym for the Devil”.

Later in the same essay, having discoursed further in a similar vein, Lord Macaulay exonerates Machiavelli from the charges made against him by a close examination of what Machiavelli actually wrote in the context of his homeland and of the period in which he lived. “It may seem ridiculous to say”, Macaulay continues, “that we are acquainted with few writings which exhibit so much elevation of sentiment, so pure and warm a zeal for the public good, or so just a view of the duties and rights of citizens, as those of Machiavelli. Yet so it is”.

In his brilliant essay ‘The originality of Machiavelli’, to be found collected in the volume *Against the current* (London, 1979), Isaiah Berlin examines the paradox of the Italian political thinker whose style is, by universal consent, as intelligible as it is concise. For scholars and other readers are so totally in disagreement as to Machiavelli’s real meaning that Sir Isaiah finds no difficulty in listing no fewer than 22 distinct, well-documented interpretations.

And the Berlin conclusion? His view is that Machiavelli stated or implied a view contrary to the whole tradition of European thought: he has no apparent interest in the compatibility of a course of action recommended in *Il Principe* with either Christian or pagan ethics. Nor does Machiavelli

think—again in Sir Isaiah’s reading—that Christian or pagan ethics are necessarily false or true. He merely thinks that, as a statesman or a politician, one must give up the practice of morality.

MACROBIOTIC COOKING

Michel Abehsera is only one of many authors who have contributed to the mania for Zen macrobiotics over the last twenty years. Where Aristotle had to deal with those who believed in armomancy (a method by which his contemporaries deduced from a person’s shoulders whether he or she was a fit sacrifice for the gods), we have to deal with cranks who try to convince everybody that one’s diet should be balanced between *yin* and *yang* foods. It turns out that it is almost impossible to apply this meaningless principle beyond a fixed diet of whole grain cereal, and it becomes increasingly difficult to convince oneself that whole grain cereal and nothing but the grain cereal is a balanced diet.

Abehsera has inflicted upon an ever-credulous public a book entitled *Zen macrobiotic cooking* (1968). Its only virtues are negative: it sensibly suggests that overeating is bad for you, and that a high fat diet is to be discouraged. On the positive side there is little here that a good textbook on nutrition does not explain better. For a balanced diet, ignore the ‘balanced diet’ fiends.

George Ohsawa runs his own foundation, the Ohsawa Foundation, to propagate the doctrine embodied in his book *Zen macrobiotics* (Los Angeles, 1965). He states that a diet of 100% whole grain cereal and ‘sips of liquid’ will cure cancer and adds: “this also applies to mental diseases and heart trouble” and he adds for good measure haemophilia, though doctors have long known that this is a hereditary disease.

THREE MAGI FROM THE EAST ADORED JESUS IN A STABLE

If one accepts the version of Matthew, in the New Testament (and there is of course no reason why one should, for the other three Gospels make no mention of wise men at all), then we do not know the number of magi who came from the East to adore Jesus but — again in the words of Matthew — they adored Jesus not in a manger, as subsequent paintings and

sculpture would have it, but in the inn. Much later in Christian tradition the Magi were given the names of Melchior (*lit.* 'King of Light'), Caspar (*lit.* 'The White One'), and Balthasar (*lit.* 'The Lord of Treasure'). The three types of gift cited — gold, incense, and myrrh — doubtless gave rise to the notion that there had been three magi ('wise men') but there are no grounds for thinking that the magi were kings. It was the *shepherds*, in the New Testament account, who visited the stable, according to Luke.

However, the whole nativity tale is now considered to be 'perhaps some Palestinian midrash . . . (*i.e.* not history pure and simple, but history with a purpose)', according to A. J. Grievé in Arthur Peake's *Commentary on the Bible* (London, 1928).

AUSTRALIAN ABORIGINE HEALERS USE A MAGIC SNAKE

Ronald Rose's *Living magic* (New York, 1956) includes a number of instructive exposures of 'magic' claims based on conjuring tricks. The conjuring tricks in these cases, however, are fraudulent because they claim to be more than they are: they claim in some cases to heal.

Some Australian aboriginal healers are supposedly masters of a 'magic snake' to assist the working of miraculous cures. Rose cites the following experience, as described by an aborigine who had been taken in, on one plane at least.

The healer "lay on his back. His body gave a shiver and his mouth opened. From his mouth the boys saw a thing come forth, a live thing that was not a snake, nor was it a cord. But it looked like a cord and moved like a snake. Slowly it issued from the gaping, quivering jaws, the length of a man's finger but not so thick. It moved about on the man's face and became longer, almost as long as man's arm. It left his mouth and crawled in the grass. Then it returned to the man's body".

In fact, Ronald Rose discovered that the 'magic snake' is a freshwater worm, which the aboriginal conjuror hides in his mouth, allowing it to emerge when he chooses. Experts on the natural history of Australia realize that the worm in question passes its early life in the body of other water denizens, emerging fully grown to the amazement of the aborigines, who — all except the 'healer' — are easily persuaded that any 'snake' born as an adult must be magical.

ANIMAL MAGNETISM

Franz Anton Mesmer (1734–1815) proposed in his *Mémoire sur la découverte du magnétisme animal* (Geneva, 1779) that “there exists a mutual influence between the Heavenly Bodies, the Earth and Animate Bodies”, the means of the influence being “a universally distributed and continuous fluid, which is quite without vacuum and of an incomparably rarefied nature, and which by its nature is capable of receiving, propagating and communicating all the impressions of movement.”

Others of the 27 propositions asserted by Mesmer include: “This property of the animal body, which brings it under the influence of the heavenly bodies and the reciprocal action of those surrounding it, as shown by its analogy with the Magnet, induced me to term it ANIMAL MAGNETISM” [Mesmer’s capitals], and “Experiments show the passage of a substance whose rarefied nature enables it to penetrate all bodies without loss of activity.”

This last proposition sounds dangerously near to that other fallacy, perpetual motion, dealt with in volume 1 of this *Dictionary* and, more thoroughly, in John Sladek’s *The new apocrypha* (London, 1974).

Mesmer’s pupil, d’Eslon, established a clinic for curing patients following the ‘findings’ of Mesmer (though Mesmer had quarrelled with him) and claimed to have effected a number of cures. He consequently asked for a committee of investigation. On 12 March 1784 Louis XVI convened a commission under the presidency of Benjamin Franklin, then ambassador of the U.S.A. to France. Members of the commission, who included Lavater, Guillotin, the astronomer Bailly, and the botanist de Jussieu, found by a majority verdict (only de Jussieu dissenting) that “The imagination does everything, the magnetism nothing”. See also **PHRENOMAGNETISM**.

Sources include: Franz Anton Mesmer, *Mesmerism* (London, 1948).

MALTHUS ADVOCATED BIRTH CONTROL TO LIMIT THE GROWTH OF POPULATION

Those who have not read *An essay on the principle of population* (London, 1798) often believe that Thomas Robert Malthus (1766–1834) taught birth control as a method to curb

the fast, disastrous rise in population that he predicted.

Malthus, Professor of Modern History and Political Economy at the East India Company College, Haileybury, suggested that population increases geometrically while food production can increase only arithmetically. He claimed that the cause of the increase in Britain's population during his lifetime was an increase in the birth rate, whereas we now know that there was a *fall* in the *death rate*. But Malthus never advocated birth control: his recommended measures were late marriage and strict sexual continence. He was also wrong (we realise) in asserting that food supplies can only be increased arithmetically.

Source: Alexander Gray, *The development of economic doctrine* (London, 1931).

'MANDARIN' IS A WORD OF CHINESE ORIGIN

A mandarin is thought of as a high-ranking Chinese official, but the Chinese name for such an official is *kuan* and the word 'mandarin' derives ultimately from the Indo-European *man* (mind), giving *mantra* (counsel), *mantrin* (counsellor, minister) in Sanskrit, the Malay *mantri* and the Portuguese *mandarim* (the official) and *mandarino* (the language) from *mandar* (to command).

THE MANDRAKE SHRIEKS WHEN PULLED OUT OF THE GROUND

According to Benjamin Walker, "Human semen, the vital essence of the male, has been recognized in all occult lore as a highly charged liquid, replete with magical substances and sinful to waste. Fresh human semen was said to be eagerly sought by vampires, witches and succubae, who would extract it during *congressus subtilis*. In Europe, the semen ejaculated by a man at the moment of his hanging was believed to be particularly powerful, and was sometimes collected straight after emission, to be used as an ingredient in magical potions. If it fell to the ground it was said to produce the mandrake plant".

We must give Benjamin Walker the benefit of the doubt — given his guarded use of reported speech — that he believes the tissue of fallacies above, and the extra fallacy occurring on page 14 of his *Encyclopedia of metaphysical medicine*

(London, 1978) that the mandrake plant can be used as an aphrodisiac. The plant is found in Genesis 30, 14–17, where the childless Rachel asks Leah for it. (The delivery of Joseph is, however, attributed to God, not to the mandrake, so our errors are truly tangled hereabouts). In some countries the mandrake was believed to glow at night but, in most places where it grew, the legend spread that the plant would shriek when pulled up. There seems to be not the slightest foundation for this belief.

MANNA MACHINES WERE USED BY THE ANCIENT ISRAELITES

Dr G. J. Carlsson of Durham (N.C.) objects with complete justification that, although the above fallacy is reported in volume 1 (pp. 157–8), there is no adequate explanation of what manna actually is.

“The manna is now understood to have been the sweet edible drops of fluid secreted by two kinds of tiny insects living on tamarisk trees. The Arabs still call such dry pellets *man*”, write Michael Avi-Yonah and Emil G. Kraeling in *Our living Bible* (New York, 1962). There is consequently no need for assumptions that the manna was brought by those extra-terrestrial ‘men’ in their flying machines.

THE PRINTED BOOK IN FIFTEENTH-CENTURY EUROPE SUPERSEDED MANUSCRIPTS ENTIRELY

The spread of printing from moveable types in fifteenth-century Europe did *not* mean the extinction of the scribe-class. As Curt Buhler enquired in *The Fifteenth-century book* (Philadelphia, 1960): “what happened to the various categories of writers of literary works, who practiced their trade prior to 1450, once the printing press was established? The professionals previously employed by the large scriptoria seem to have done no more than to change their titles and thereupon became calligraphers; in any event, they went right on doing what had been their task for centuries . . .

Some scribes joined forces with the enemy and became printers themselves — though some of those upon whom Fortune did not smile later forsook the press and returned to their former occupation. This is rather strong evidence for the belief that a scribe, in the closing years of the fifteenth century, could still make a living for himself with his pen”.

THERE WAS A SINGLE WORLD MAP THOUSANDS OF YEARS OLDER THAN THE CIVILIZATION OF SUMER

Charles H. Hapgood, in *Maps of the ancient sea kings* (London, 1977), argues that there was a world civilization thousands of years before any so far recorded, that is long before the Chinese, Sumerian and Egyptian cultures so clearly documented by archaeological and other evidence.

The most important evidence adduced is the 'Orontaeus Finaeus' world map drawn in 1531. This allegedly produces the correct shape of the hidden continent of Antarctica, then as now beneath a thick sheet of ice reaching out far into the ocean, in some places up to two miles thick. Mercator and Piri Reis, in their maps, also show Antarctica without ice. Hapgood concludes that all these maps, and those which have been lost, derived from one single world map of great antiquity, from a civilization older than any yet known.

Nobody can take this theory seriously until *some* kind of corroborating evidence is produced. At present, all we have are assertions. See ROBERT SCRUTTON AND THE OTHER ATLANTIS.

MARES ARE IMPREGNATED BY THE WEST WIND

Pliny tells us in Book VIII (chapter 42) of the *Historia naturalis*: "It is well known that in Portugal, in the district of Lisbon and the Tagus, the mares turn away from the west wind and are fertilized by it. The foals born of such a union are extremely fast but do not live longer than three years". Pliny's share of common sense can be judged from the fact that he died while *observing* the eruption of Vesuvius in 79 A.D. that destroyed Pompeii and Herculaneum.

His predecessor, Virgil, oddly enough believed the same story (and may indeed have been a source for Pliny's nonsense) which he told in Book III of the *Georgics*. Varro, Solinus, and Columella also give credit to the fallacy.

It does indeed go back to Homer (*Iliad*, xvi, 150) and to Aristotle (*Hist. Anim.* vi, 18) and forward to the times of the so-called sceptic Pierre Bayle (1647-1706), who compiled the great *Dictionnaire historique et critique* (Paris, 1697).

The tale may have originated from accounts by Phoenician sailors, those accomplished merchants, who praised the fertility of the Portuguese soil, the soft ocean breezes of the

summer off Portugal, and the fine horses bred along the Portuguese coastline who were as swift as the wind. A garbled version of these factors may easily have led Roman writers to amplify the legend vaguely known from Homer and Aristotle. Or not. We just don't know how grown men come to believe such fallacies in the first place, or how they can presume on the equal ignorance of their readers to accept it all: hook, line, and sinker.

MARGARINE IS THE GLYCERIDE OF MARGARIC ACID

Michel Chevreul, the 19th-century French chemist, identified three fatty acids: the oleic, the stearic, and the margaric (the last-name from its pearly lustre: Gk. *margarites* = pearl). But 'margaric acid' is really a simple combination of oleic and stearic acids, as was demonstrated by a later chemist: there is no such thing as a 'margaric' acid. But by that time the error was deeply embedded in the popular and expert mind alike, *Margarin* having been applied to the glyceride of the imagined fatty acid and this, through a misapplication of the chemical term, was transferred to the butter substitute we know today. In French the 'g' is hard and it should properly be so in English pronunciation — after all, we don't say Marge-aret or Marge-ot or Marge-uerite.

Sources include: Bergen Evans, *Comfortable words* (London, 1963).

MARIE-ANTOINETTE SAID "IF THE PEASANTS HAVE NO BREAD, LET THEM EAT CAKE"

The quotation from the *Confessions* of Jean-Jacques Rousseau runs: "Enfin je me rappelai le pis-aller d'une grande princesse à qui l'on disait que les paysans n'avaient pas de pain, et qui répondit: 'Qu'ils mangent de la brioche' ". (I finally recalled the thoughtless aphorism of a great princess, to whom someone said that the peasants had no bread to eat, who replied 'Then let them eat cake'.)

It has always been assumed that it was Marie-Antoinette whom Rousseau pilloried in this manner, but that cannot be the case, for she arrived in France in 1770, some two years after Rousseau wrote the passage in question.

'MARMALADE' DERIVES ITS NAME FROM MARY QUEEN OF SCOTS

A correspondent to the London *Sunday Times* has stated that marmalade was first made by a French chef to Mary, Queen of Scots, during her imprisonment in Fotheringhay Castle, to cheer her up during an illness, 'marmalade' being a corruption of 'Marie est malade'.

This is completely wrong. The Old French *mermelade* means 'made of quinces', marmalade having originally been made from quince (Portuguese, *marmelo*).

Sources include: T. C. Skeat (grandson of the great etymologist), personal communication, 23 November 1978.

ONE SET OF MARRIAGE CUSTOMS IS BETTER THAN ANOTHER

This seems not to be the case. Bertrand Russell put the following view, in *Let the people think* (London, 1941).

"The bulk of the population of every country is persuaded that all marriage customs other than its own are immoral, and that those who combat this view do so only in order to justify their own loose lives. In India, the remarriage of widows is traditionally regarded as a thing too horrible to contemplate. In Catholic countries divorce is thought very wicked, but some failure of conjugal fidelity is tolerated, at least in men. In America divorce is easy, but extra-conjugal relations are condemned with the utmost severity. [One observes some relaxation in the intervening forty years. Ph. W.] [Muslims] believe in polygamy, which we think degrading. All these differing opinions are held with extreme vehemence, and very cruel persecutions are inflicted upon those who contravene them. Yet no one in any of the various countries makes the slightest attempt to show that the customs of his own country contribute more to human happiness than the customs of others.

"When we open any scientific treatise on the subject such as (for example) Westermarck's *History of human marriage*, we find an atmosphere extraordinarily different from that of popular prejudice. We discover that every kind of custom has existed, many of them such as we should have supposed repugnant to human nature. We think we can understand polygamy, as a custom forced upon women by male oppressors. But what are we to say of the Tibetan custom, according to which one woman has several husbands? Yet

travellers in Tibet assure us that family life there is at least as harmonious as in Europe. A little of such reading must soon reduce any candid person to complete scepticism, since there seem to be no data enabling us to say that one marriage custom is better or worse than another”.

In the passage above, Russell seems to be saying that Muslims who do not practise polygamy may be persecuted, which is of course not true. Muslims *may* legally marry up to four wives, but they in fact seldom in these days have more than one wife at any one time. A flaw in his argument here does not render less moving the rest of his plea for tolerance.

A MARTYR IS ONE WHO DIES FOR A BELIEF

This idea is very commonly believed, but it is only partly true. The Greek *martyr* means ‘witness’, and Skeat’s definition is ‘one who suffers for a belief’: death is not a necessary part of the definition, though in religion a ‘martyr’ is generally taken to denote someone who died a heroic death rather than renounce a belief.

The Tolpuddle Martyrs, six Dorset labourers who suffered for their belief in trades unionism in the 1830s, were not executed but merely transported to Australia in 1834 and permitted to return before their seven years’ sentence was up.

MATHEMATICAL TRUTHS CAN BE COMPLETELY PROVED WITHIN THE SYSTEM

Kurt Gödel, in an epoch-making paper published in 1931, showed that the deductive system of A. N. Whitehead and Bertrand Russell’s *Principia mathematica* (Cambridge, 1910–13), and also related systems such as standard set theory, contain ‘undecidable’ statements, which may be defined as statements that *are* true within the system but cannot be proved to be true *within* the system. More precisely, Gödel demonstrates that if a system (like that of *Principia mathematica*) satisfies certain reasonable conditions such as consistency (defined as ‘freedom from contradiction’), then it allows the formation of sentences that are undecidable. Gödel also shows that, if such a system is consistent, there is no way to prove that consistency within the system. In a certain sense, therefore, mathematical truth cannot be completely proved.

However, as E. Nagel and J. R. Newman stress in their *Gödel's proof* (London, 1959, p. 101), "Gödel's proof should not be construed as an invitation to despair or as an excuse for mystery-mongering. The discovery that there are arithmetical truths which cannot be demonstrated formally does not mean that there are truths which are forever incapable of becoming known, or that a 'mystic' intuition (radically different in kind and authority from what is generally operative in intellectual advances) must replace cogent proof. It does not mean, as a recent writer claims, that there are 'ineluctable limits to human reason'. It does mean that the resources of the human intellect have not been, and cannot be, fully formalized, and the new principles of demonstration forever await invention and discovery".

THE MAYA OF CENTRAL AMERICA MINED THE MOON

Anyone reading Eric and Craig Umland's *Mystery of the ancients* (New York, 1974) for hard scientific facts is likely to end up as disappointed as companies mining the metal core of the Moon.

As Robert Molyneux chivalrously wrote, in the *New York Library Journal* (July 1974, p. 1830): "It's a bit far-fetched even for the most rabid von Däniken fans. In fact, this book reads like a parody of him (see, the Mayans mined the Moon's metal core completely. How do we know? Well, there isn't one now. And so on.)"

One might compare the spate of sub-science and pseudo-science in our bookshops and libraries today with the craze for witchcraft in New England under Cotton Mather in the 1690s.

METAPHYSICAL MEDICINE

'Metaphysical medicine' is defined by Benjamin Walker, in his *Encyclopaedia* of the subject (London, 1978), as "applied to the causes and treatment of disease believed to arise from pathologies of what is known in occultism as the second body, or the non-material substratum of the human organism".

"No doubt", writes Maurice Richardson in *The Times Literary Supplement* (17 March 1978), "the esoteric brigade will be queueing up for this at the occult bookshops in Paranoia Row where, in addition to the works of Madame

Blavatsky and the mahatmas, you can buy a Kilner auroscope and a radiesthetic pendulum for home diagnosis . . . There are various inaccuracies, some blatant like the statement that 'there are over thirty women to every male in English mental asylums'. And the article on *Asylums* makes all the very worst abuses and backwardnesses typical of the modern mental hospital in this country and America. Among minor errors, it was not Baudelaire but Gérard de Nerval who led a lobster on a chain. And it is news to me that Milton suffered from congenital syphilis; that Swift was attacked by it; and that Shakespeare was an epileptic".

There is no proof that Walker's 'second body' exists, therefore there can be no proof that any of the remedies put forward to treat diseases of the 'second body' can be used with advantage. The whole encyclopaedia is a curiosity of useless learning.

THE LONGEST DAY IS ALWAYS THE SAME AS MIDSUMMER'S DAY

In the northern hemisphere, Midsummer Day is always 24 June. Midsummer as a time of year is the week around the summer solstice (21 June), and the longest day is variable. If a solstice happens to fall late in the day on 21 June, by Greenwich time, that will be the longest day of the year at Greenwich, even if it is only by a fraction of a second, but the longest day that year in Japan will be 22 June (local time) and the same applies to other eastern longitudes. If a solstice occurs late on 21 June in one year, it will be nearly six hours later next year, that is to say early on 22 June. In the year 2000, the summer solstice reaches its earliest date for a hundred years: 21 June 02^h.

Astronomically, summer begins about 21 June. The season is normally understood to include the months of June, July and August in North America, but May is normally included as a summer month in Britain.

Source: *Whitaker's almanack for the year of Our Lord 1980* (London, 1979).

MIGRAINE AND HEADACHES ARE MORE COMMON AMONG THE HIGHLY INTELLIGENT, AND ARE CAUSED BY HIGH BLOOD PRESSURE

It certainly flatters the migraine sufferer (like the present

writer) to be told that his affliction proves high intelligence, but a team from Britain's Medical Research Council has emphatically denied any such relationship.

The same team repudiated the widely-held view that headaches are a symptom of high blood pressure. More than four hundred patients subject to headaches were tested, and their blood pressure was on average neither higher nor lower than average. John Camp writes: "Neither of these findings was agreed with much enthusiasm by the public, and patients with chronic headache will continue to think their doctor neglectful if he does not test their blood pressure at the first opportunity".

Source: John Camp, *Magic, myth and medicine* (London, 1973).

MILK TURNS SOUR DURING A THUNDERSTORM

One of the many fallacies connecting two events together, when a third event is the cause of both.

Hot, humid weather favours *both* the occurrence of thunderstorms *and* rapid development of bacterial changes in milk producing the lactic acid which, at a certain point, turns milk sour. There is no necessary connection between the two phenomena which may be caused by sultry weather.

WHITEHEAD'S FALLACY OF MISPLACED CONCRETENESS

Alfred North Whitehead (1861–1947) argued that men have mistakenly ascribed a concrete nature to essentially abstract notions in an attempt to understand the world in which he finds himself.

Thus, poverty, love, and angels are merely verbal signs which are too often given a concrete form or are discussed as though they had identical meanings for different people at different times in different places. Whitehead's belief was that such notions are in fact always derived from actual human experience, and the abstract notions are invented and secondary. It is dangerous to treat the abstract ideas as concrete. Whitehead's rejection of reductionism, known as the 'fallacy of misplaced concreteness' is based on his denial that what we have so far discovered (e.g. as regards atoms) is the

whole of what is contained in the reality independent of ourselves.

Sources include: Conrad Hal Waddington, *Tools for thought* (London, 1977, pp. 24–5).

MISREADING

Fallacies are caused or exacerbated by careless reading, influenced by the bias or prejudice of the reader. James Sully, in *Illusions* (4th ed., 1895), gives the instance: “I was lately reading the fifth volume of G. H. Lewes’s *Problems of life and mind*. In reading the first sentence of one of the sections, I again and again fell into the error of taking ‘The great Lagrange’ for ‘The great Language’. On glancing back I saw that the section was headed ‘On Language’ and I at once recognized the cause of my error in the pre-existence in my mind of the representative image of the word ‘language’.”

ENGLISH MONASTERIES, BEFORE THE SUPPRESSION, WERE SCHOOLS, INNS, AND POOR LAW INSTITUTIONS

School text-books seem to take centuries, rather than decades, to catch up with historical facts. One fallacy which is repeated from textbook to examination answer, and eventually back again, is the part played by English medieval monasteries in lay education.

It was neither the practice nor the duty of monks to educate the general public, and it was only after the Council of Trent (1543–63) that the ‘teaching congregations’ (the Jesuits and Oratorians, for example), were established on the Continent of Europe. It was the *secular* clergy and the parochial or diocesan foundations — *not* the monks and monasteries — which provided schools and schoolmasters, in accordance with papal ordinances, particularly that of Innocent III of 1215. Some wealthy monks did provide some grammar schools (Abbot Samson’s at Bury St Edmunds in Suffolk is a case in point) but they did so as private benefactors, and the school house was outside the monastery precinct. In some houses, the senior monks acted as trustees for school lands (as at Worcester or Canterbury), and the Dissolution involved simply a change of trustees, and had no connection with the day-to-day running of the school. It was the Chantries Act of

1547 which hit the grammar schools, despoiling the parochial foundations (including ecclesiastical gilds and collèges) with which the schools are closely bound up. 'The drowning of youth in ignorance' was the work of Somerset, not of King Henry VIII.

Similarly, the use of monasteries as inns in southern England was a rare occurrence (though commoner in the north), and southern abbeys had in most cases built inns for visitors well before 1536.

Finally, the place of almsgiving and help for the poor generally in monasteries has been greatly exaggerated. Monks generally enjoyed two servants each on average, and it has been argued that the employment of servants in this way was a form of poor relief, but many of these were able-bodied workers who assisted on farms and in vegetable gardens. It was commonly alleged in 15th-century visitations that monastery dogs were given leftovers ('broken vittles') that were intended for the poor. Yet many monasteries and abbeys were housed in extremely remote areas (Tintern and Rievaulx, for instance), where only a few paupers existed.

And the dispossessed monks did not swell the ranks of Tudor beggars. They were offered good pensions, and many secured comfortable benefices, as can be shown by extant pension-lists. Many complained that their pensions were not received regularly, but then this was equally true of salaries in the Tudor Civil Service.

Sources include: G. Baskerville, *English monks and the suppression of the monasteries* (London, 1937); and Historical Association, *Common errors in history* (London, 1951).

THE CONTENTS OF THE MOON FELL ON THE EARTH

Baron A. d'Espiard de Colonge is responsible, in his bizarre book *L'Égypte et l'Océanie* (Paris, 1882), for propagating a large number of fallacies.

The main error concerns the history of the Moon and the Earth, for the good Baron stated without a shred of proof that at some time the seas, continents and cities of the inhabited Moon fell to Earth, burying in the process the contemporary cities and valleys of the Earth in sand (where there was once flourishing life) and water (where there was once land).

“Modern Europeans and all other peoples”, he wrote excitedly, “have only a few centuries in which to organise and prepare on our Earth to withstand assaults from extra-terrestrial powers”. He considered this inter-galactic warfare to be only one episode in universal carnage.

D’Espiard de Colonge argues that the sand covering much of Egypt is of lunar origin, and that the Pyramids as we see them today represent only one section of the ancient structures. In fact, he states, there are long galleries, tunnels, rooms, and treasure-houses of great antiquity. Initiates know where these tunnels are, and have access to them in the event of future wars.

It all sounds very thrilling, but the mundane archaeological fact of the matter is that the tunnels of d’Espiard do not exist.

THE INHABITANTS OF THE MOON ARE SMALL AND STRONG

One of the posthumous difficulties into which mystics run headlong concerns the testing of prophecies or statements which the mystic believed untestable, and consequently irrefutable. Such problems have overtaken many mystics who have been incautious enough to be too specific.

Thus, Emanuel Swedenborg (1688–1772), who began life as a scientist and engineer, being appointed about 1716 to the Swedish Board of Mines, turned at the age of fifty-five or so to entirely mystical studies, writing hundreds of volumes in Latin, and publishing them at his own expense, to show that he was the favoured instrument of Christ. Swedenborg claimed that he had complete access to the world of angels from his 53rd year, that he could talk with the dead, and that he walked celestial streets in a trance as easily as he was later to walk the streets of London.

It is important to stress that Swedenborg related his experiences as *real*, not symbolic — like Savonarola’s tale of his encounter with the Queen of Heaven. Swedenborg related the *facts* as he required them to be believed by the faithful, who formed the members of his ‘New Church’. It is Swedenborg who said “I do not labour to recall and to express the manifestation made me in some moment of ecstatic exaltation. I write you down a plain statement of journeys and conversations in the spiritual world which have made the greater part of my daily history for many years together”.

While one cannot refute the delusions concerning angels which fill hundreds of pages of Swedenborg's Latin prose treatises, there remain the assertions which are known to be actually fallacious. Some concern the inhabitants of Venus, known to us but not to Swedenborg to be a planet with a surface-temperature of 900°F or 500°C, and with an atmosphere about 100 times as dense as Earth's, composed largely of carbon dioxide.

The inhabitants of Venus, now known categorically not to exist, "are of two kinds", writes Swedenborg. "Some are gentle and benevolent, others wild, cruel and of gigantic stature. The latter rob and plunder, and live by this means; the former have so great a degree of gentleness and kindness that they are always beloved by the good; thus they often see the Lord appear in their own form on their earth".

To compound the fallacy — again one must record that Swedenborg is claiming no symbolic or allegorical meaning for his words, but literal veracity — Swedenborg describes the denizens of the Moon, a planet now proved to be uninhabited. They "are small, like children of six or seven years old; at the same time they have the strength of men like ourselves. Their voice rolls like thunder, and the sound proceeds from the belly, because the moon is in quite a different atmosphere from the other planets".

Since 99% of Swedenborg's writings are abstract and to be taken upon trust, his errors in the few testable statements bode ill for the rest of the teachings of the New Church

Sources include: Lewis Spence, *An encyclopaedia of occultism* (New York, 1960); and Emanuel Swedenborg, *Heaven and its wonders, and Hell* (Everyman's Library, London, n.d.).

THE MOON IS A HOLLOW SPACESHIP, ABANDONED BY ANCIENT VISITORS FROM OUTER SPACE

In the English-language *Sputnik* magazine, published in the U.S.S.R., Mikhail Vasin and Alexander Shcherbakov stated that "the Moon is not a natural satellite of Earth, but a huge, hollowed-out planetoid fashioned by some highly advanced, technologically sophisticated civilization into an artificial 'inside out' world which was steered into orbit around the Earth eons ago!" [Vasin and Shcherbakov's exclamation mark.]

The Soviet authors reject the three traditional hypotheses of the origin of the Moon: a broken-off part of the Earth; formed independently from the same cloud of dust and gas as the Earth, when it became the Earth's natural satellite; and formed separately from the Earth and far from it (perhaps even outside the solar system). The first hypothesis is rejected by evidence; the second because the specific gravity of the Moon (3.33 grammes per c.c.) is so much less than that of the Earth (5.5 grammes per c.c.); and the third because it would have been 'virtually impossible' for the Moon to have been trapped into a geocentric orbit so close to the circular.

The Soviet hypothesis (they do not admit any more than four, including their own) is that "the Moon is an artificial Earth satellite put into orbit around the Earth by some intelligent beings unknown to ourselves".

This view is popularised by Donald K. Wilson, in *Our mysterious spaceship Moon* (New York, 1975), who does not even mention the possibility that the Soviet authors may be hoaxing us (and him) and avoids throughout the vexed problem of geological (and hence *natural*, not artificial) structures which the Apollo astronauts saw, described, touched, and even *sampled* for scientists on Earth.

THE MOON IS THE IMAGE OF THE EARTH

One B. Bulstrode is responsible for a compendious explanation that the Moon, on which Americans landed barely a century afterwards, is not a solid body at all, but merely an image of the Earth. His work, published in London and Calcutta in five parts (1856–8), is entitled *The moon is the image of the Earth, and is not a solid body*.

Bulstrode states that the Earth is "brought to a focus" and describes a "looped orbit round the sun". A solar eclipse is explained away in the following rather peculiar terms: "At the time of eclipses, the image is more or less so directly before or behind the earth that, in the case of new moon, bright rays of the sun fall and bear upon the spot where the figure of the earth is brought to a focus, that is, bear upon the image of the earth, when a darkness beyond is produced reaching to the earth, and the sun becomes more or less eclipsed". One might say that the darkness, as regards the absence of the 'visiting moon', is in the eye of the beholder.

**THE POSSIBILITY OF MOON TRAVEL IS NEWLY
IMAGINED**

Joseph Glanvill, in *The vanity of dogmatizing* (London, 1661, later eds. being entitled *Scepsis scientifica*), wrote: "I doubt not but . . . some Ages hence a voyage to the Moon will not be more strange than one to America. To them that come after us, it may be as ordinary to buy a pair of wings to fly into remotest regions, as now a pair of boots to ride on a journey".

**BEETHOVEN CALLED HIS SONATA No. 14 in C SHARP
MINOR THE 'MOONLIGHT' SONATA, AND GAVE IT
AS A LOVE-OFFERING TO COUNTESS GUICCIARDI**

The dedication of Beethoven's fourteenth sonata was given to Contessa Giulietta Guicciardi in place of the Rondo in G (originally written for her), which he needed for someone else.

Neither did Beethoven call this work the 'Moonlight' Sonata. In fact, only one of his 32 piano sonatas was given a name by him: the 'Pathétique'. The poet-critic Ludwig Rellstab happened to remark that the first movement reminded him of moonlight on the Vierwaldstätter See, and the romantic assumptions started from there.

Source: Burnett James, *Beethoven's piano sonatas*. Notes to the Daniel Barenboim recordings on SLS 794.

**A MULE IS THE OFFSPRING OF A SHE-ASS AND
A STALLION**

Not technically, no. A mule is the offspring of a he-ass and a mare. The correct name for the off-spring of a she-ass and a stallion is a hinny. Everyone asserts that a mule is incapable of giving birth, but the operative word is 'ordinarily', for cases have been known. And as for the legend of its stubbornness, let the *Oxford English Dictionary* defend the animal: "With no good grounds, the mule is a proverbial type of obstinacy."

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“Nemo solus satis sapit” (Nobody is wise enough by himself) — PLAUTUS, *Miles Gloriosus*.

ADAM, EVE, AND THE NAVEL DISPUTE

Adam and Eve are mythical ancestors in some Eastern religions: the question of whether they had a navel is therefore pointless to debate. That has not prevented those with nothing better to do from debating it. Sir Thomas Browne, the eminent Norwich physician, decided in the middle of the 17th century that Adam and Eve had no navel. Sir Thomas, disapproving of the way in which earlier artists had depicted the primal pair, did not stop short of criticising Michelangelo Buonarroti and Raphael for their ‘unrealistic’ inclusion of navels. “This is observable”, notes Browne in Book V, chapter V of the *Pseudodoxia epidemica* (London, 1646), “not only in ordinary and stayned peeeces, but in the Authentick draughts of Urbin, Angelo, and others; which notwithstanding cannot be allowed, except we impute that unto the first cause, which we impose not on the second, or what we deny unto nature, we impute unto Naturity it selfe; that is, that in the first and most accomplished peece, the Creator affected superfluities, or ordained parts without all use or office . . . Now the Navell or vessells whereof it is constituted, being a part precedent, and not subservient unto generation, nativity, or parturition, it cannot be well imagined at the creation or extraordinary formation of Adam, who immediately issued from the Artifice of God; nor also that of Eve, who was not solemnly begotten, but suddenly framed, and anomalously proceeded from Adam”.

Nevertheless, great artists continued to paint Adam, Eve, and even God, with a navel. A Hamburg physician called Christian Tobias Ephraim Reinhard sprang at them again, in the middle of the 18th century, with his *Untersuchung der Frage: ob unsere erstern Urältern, Adam und Eva, einen Nabel gehabt* (Hamburg, 1752). Dissertations are still — let it

be remarked — being written on matters as intrinsically insignificant, not to say foolish.

Reinhard justified the Biblical account of the Creation of man and woman (and of everything else) in all particulars and in general. “And whoever doubts this”, he added, “is declared an unworthy member of the Church and is hereby handed to the Devil”.

So now you know.

COMINALE REFUTES ALL NEWTON

Antinewtonianismi pars prima (Naples, 1754) and *pars secunda* (Naples, 1756) is a detailed, largely fallacious refutation of everything that Newton wrote, by Celestino Cominale, Professor of Medicine at Naples.

Augustus de Morgan, in *A budget of paradoxes* (2nd ed., Chicago, 1915, vol.1, p. 162), observes of the work: “The first volume upsets the theory of light; the second vacuum, *vis inertiae*, gravitation, and traction. I confess I never attempted these big Latin volumes, numbering 450 closely-printed quarto pages. The man who slays Newton in a pamphlet is the man for me. But I will lend them to anybody who will give security, himself in £500, and two sureties in £250 each, that he will read them through, and give a full abstract; and I will not exact security for their return. I have never seen any mention of this book: it has a printer, but not a publisher, as happens with so many unrecorded books”.

THE NIGER IS THE NILE, A TRIBUTARY OF THE NILE, OR THE RIVER CONGO

European explorations of the River Niger began with the founding of the African Association in 1788, who sent a number of unsuccessful expeditions before charging Mungo Park, in 1795, with the task. Park travelled from Pisanía along the River Gambia until he arrived at Ségou, on the Niger, when he followed its course for some one hundred miles to Sulla. He then turned back, and finally returned to Britain on 22 December 1797. His book, *Travels in the interior districts of Africa* (London, 1799), offered the curious two alternative solutions to the problem of the Niger: Park suggested that it was either a tributary of the Nile, or identical with the Congo. Both were wrong. He rejected the idea, first

put forward by the great Arab traveller Ibn Battuta in the fourteenth century, that the Niger is identical with the Nile. That notion is also wrong.

It was not until 1822 that the source of the Niger was discovered in Sierra Leone, and not until 1830 that the Lander brothers found its mouth, in the Gulf of Guinea.

It is worth protesting at the Eurocentric fallacy underlying most geographical literature of exploration and discovery. As the history of Africa (and other continents) becomes better known and both oral and written literary sources translated and published, it is becoming increasingly apparent that a great deal of knowledge, tradition, and speculation was always retained in the tribal cultures. The body of information might well have been made available more quickly, more sympathetically and more comprehensively, if the foreigners had not been rightly feared for their slave raids, cruelty, ignorance of local ways, and prejudice. Mungo Park made an attempt to learn Mandingo, but no early traveller — not even the expert linguist Richard Burton — mastered the languages of all the peoples with whom he chose to come into contact. The 'Dark' Continent was made so more by the exploitation of European nations than by the nature of the land or its peoples.

Sources include: E. W. Bovill, *The Niger explored* (London, 1968).

NIGHT AIR IS BAD FOR YOU

We have the authority of Shakespeare, in Act II of *Julius Caesar*, for the statement.

“And will he steal out of his wholesome bed,
To dare the vile contagion of the night
And tempt the rheumy and unpurged air
To add unto his sickness?”

Night air is colder than day air, so that anyone failing to take the precaution to add a blanket or two may feel cold, or aggravate influenza.

Florence Nightingale, no less, in her *Notes on nursing* (1860) scoffed at “the dread of night-air. What air can we breathe at night but night-air? The choice is between pure night-air from without and foul night-air from within. Most prefer the latter. An unaccountable choice”.

In cities, night air may contain less carbonic acid, since

fewer fires are burning, but central heating has done away with much of the air pollution which troubled our ancestors, and the terrible 'pea-souper' fogs of London associated with Victorian times are fortunately a thing of the past.

On balance, night air may be marginally better for you than day air.

NIGHTMARES ARE CONNECTED WITH MARES

The Old English 'maere' (incubus, a demon descending on you while you sleep, in the popular fancy) is the source of the second syllable in our familiar word for a bad dream, 'nightmare'. Related to the word 'maere' are the Polish *zmora*, the Czech *mura* (both meaning 'nightmare') and the first syllable of the Old Irish *Morrigan*, denoting the Queen of the Little People.

The modern English 'mare' is derived by contrast from the Old English 'mearh', meaning 'horse', and has no connection with 'maere' at all.

Source: C. T. Onions, *The Oxford dictionary of English etymology* (Oxford, 1966).

NOBEL INSTITUTED SIX PRIZES IN 1901

When the Nobel Prizes were first awarded, in 1901, there were five different categories in which the prizes could be awarded: Chemistry, Literature, Medicine and Physiology, Peace, and Physics. Economics, the sixth prize awarded nowadays, was instituted as recently as 1969.

Incidentally, the Swedish chemist and engineer Alfred Nobel (1833-96) set up the Nobel Foundation in 1866, thirty-five years before the first prize was awarded.

THE PROPHECIES OF NOSTRADAMUS

Having dealt with prophecy in volume 1 (pp. 205-6) of this *Dictionary*, I am reminded by readers that very few people *inclined* to believe in prophecies can actually be persuaded *not* to believe in them, no matter what weight of evidence is adduced against the fallacy that nobody is gifted with supernatural foresight. If one prophesies that a runner, who is leading by a hundred metres just short of the tape, will win a 5,000 metre race, then the prophecy is almost sure to be fulfilled. 'Prophecy' becomes increasingly unlikely of fulfil-

ment as one goes back in time, so that I can not only be sure that I shall fail now to predict the winner of the 5,000 metre race at the Olympic Games in the year 2020, but I can also be sure that nobody else, in 1980 or even 1985, can predict the identity of the winner so far ahead.

As those gifted with a modicum of common sense have remorselessly pointed out to gamblers, if there had been a single authentic case of true prophecy in modern times, the prophet could have won a fortune instantly at the card-table, in casinos, and on the race-track, not to mention the football pools. Yet we have no recorded evidence whatsoever for such a prodigy.

This does not prevent the literature on Nostradamus increasing almost yearly: indeed, James Laver's beautifully written *Nostradamus, or the future foretold* (London, 1942) was revised for a new edition in 1952, and has reappeared again revised — in 1973. James Laver begins his book with the assumption that “a great danger awaits any one who sets out to interpret the quatrains of Nostradamus. He becomes so completely engrossed in the fascinating crossword puzzle of the text, in the Sherlock Holmes pursuit of clues and cryptograms that in the end he is liable to become the victim of his own ingenuity, and to see connexions and meanings where none can be reasonably be supposed to exist. All the commentators have succumbed in some measure to this tendency and I do not imagine that I have completely escaped it myself”.

Michel de Nostredame (1503-66), who latinized his name to Nostradamus, was born in St. Rémy de Provence, and developed an early interest in astrology. He published popular almanacs and prognostications from 1551, then the fantastic *Prophéties* (Lyon, 1555, excessively rare but incomplete) and the expanded edition of the same book (2 fascicules, Lyon, 1558 and 1566). The book takes the form of ten ‘centuries’, so called because each of the ten parts contains a hundred quatrains, each quatrain being a prophecy. However, the language of these prophecies is so obscure (in an archaic mixture of words derived indiscriminately from Greek, Latin, French and Provençal) and their content so vague, that few commentators can agree on their ‘real’ meaning, if any. “Warned by the examples of others”, writes James Laver in the latest edition of his examination of Nostradamus and his

prophecies, "one may well hesitate to venture into a bog where so many have been engulfed. Yet a study like the present one would obviously be incomplete unless some attempt were made to relate the quatrains of Nostradamus to contemporary events and even to those of the immediate future". This is as logical as to state that, because nobody has yet seen a monochrome rainbow, a study of rainbows would be incomplete without an examination of the monochrome type. Mr Laver is a noted authority on costume, and gives the game away in the last sentence of his 'Epilogue': "My purpose [in writing the book] was only to indicate the lines on which I have striven to explain the (to me) inescapable fact that Nostradamus was a true Prophet".

There we have it. First the theory, then the facts to prove it. Unluckily for the supporters of the true Prophet, Lyon Sprague de Camp took the trouble to analyse the prophecies in *Esquire*, December 1942, pp. 306-10, a source which James Laver does not credit in his quite extensive bibliography. De Camp was unable to make head or tail of most of the predictions. Of the 449 he was able to decipher with any certainty of their true meaning, 18 have subsequently been proved definitely and unequivocally false, 41 have been fulfilled (but were worded so as to enjoy an even chance of fulfilment), and the other 390 cannot be identified with anything that has happened, but of course some of these last might have been fulfilled without our knowledge. Bergen Evans, in *The spoor of spooks, and other nonsense* (London, 1955), observed that "Nostradamus's rate of success as a prophet is considerably below what he would have obtained by flipping a coin".

Several editions of the Nostradamus prophecies are always in print and to be found on any bookshop shelves devoted to the occult. Readers of the prophecies might be compared with those who go to watch conjurors *hoping* that real magic will somehow replace the clever but honest trickery of the entertainers.

PROSPER RENÉ BLONDLOT AND N-RAYS

Blondlot, Professor at the University of Nancy, and a distinguished physicist, could by no stretch of the term be considered a pseudo-scientist, yet he was responsible for one of the most notorious fallacies adopted — though for only two

years or so — by the European scientific establishment in the 20th century.

At the beginning of 1903, Blondlot was devoting a great deal of study to the X-rays then recently discovered by the German physicist Röntgen, and thought he had found new rays quite distinct from X-rays, one of their differences being that the new 'N-rays' (N for Nancy) could be polarized. Blondlot believed that N-rays could travel through metals and many other substances normally opaque to spectral radiation, and published his preliminary findings in the *Proceedings of the Académie des Sciences* on 23 March 1903. Not only did Blondlot manage to list all the properties of his N-rays (which we now know did not exist), but he measured their wavelengths. Other scientists reportedly repeated his experiments and made additional observations of an effect which we are sure was a figment of their imagination. Lucien Cuénot has suggested that the discovery of (and further interest in) the N-rays might have been begun and fostered by a laboratory assistant at Nancy, though it is certainly remarkable that such eminent figures as Becquerel, Bordier, Broca, Ballet and Zimmern should have endorsed the existence of the rays. Rostand points to the urge to make discoveries common among most scientists, a weakness for preconceptions, and autosuggestion, all elements which feature strongly in occultism and parascience generally.

The two-year history of N-rays can be summarised briefly. Blondlot first 'discovered' them in the radiation emanating from an X-ray tube; later he detected them in the radiation emitted by incandescent burners, and even from ordinary sources of heat and light. When they struck a small spark or flame, they increased the brightness. They also increased the phosphorescence of chemical compounds such as calcium sulphide. The sun was found to be a source of N-rays, which could be stored and re-emitted as secondary radiation by certain substances such as carbon sulphide, quartz, limestone, and eventually impure water, the last a unique example of 'phosphorescence in a liquid body'.

Blondlot now theorized that, if N-rays actually intensify the brightness of a given source, then surely other rays, the so-called inhibitors, must have an opposite effect. The postulate was swiftly confirmed, and the inhibitors were named N_1 -rays.

Other scientists moved into the field: Macé de Lépinay

proved that sound vibrations give rise to the emission of N-rays in the vicinity of the antinodes; Bichat found them emerging from liquefied gases and Lambert from soluble ferments. Bugard recorded the rotation of the plane of N-rays' polarization under the influence of a magnetic field. Charpentier found them emerging from ozone, and observed that N-rays were conducted by a copper wire. Fabre reported the emission of N-rays through contractions of the uterus during labour, the intensity of the emission being proportional to the force of the contractions.

It is worth repeating that N-rays do not exist and never have. "No less extraordinary", writes Jean Rostand, "is the *degree-of consistency, and of apparent logic that pervaded the whole of this collective delusion*; all the results were consistent, and agreed within fairly narrow limits". Lucien Cuénot concludes: "All critics (and all investigators have to be their own critics first and foremost) must be sceptical of everything — of their desire to make new discoveries and above all of the right-hand men: assistants are not usually given to a scrupulous love of truth, and have little aversion to rigging experiments; they are quite ready to flatter their superiors by presenting them with results that agree with their *a priori* notions. Alternatively, they often get malicious pleasure out of deceiving their superiors, thus driving them to commit errors — envy and ingratitude often go hand in hand".

Sources include: Jean Rostand, *Error and deception in science* (London, 1960, pp. 12-29).



“Order and disorder are purely human inventions . . . If I should throw down a thousand beans at random upon a table, I could doubtless, by eliminating a sufficient number of them, leave the rest in almost any geometrical pattern you might propose to me, and you might then say that that pattern was the thing prefigured beforehand, and that the other beans were mere irrelevance and packing material. Our dealings with Nature are just like this. She is a vast *plenum* in which our attention draws capricious lines in innumerable directions. We count and name whatever lies upon the special lines we trace, whilst the other things and the untraced lines are neither named or counted”. — WILLIAM JAMES, *Varieties of religious experience*. [Connoisseurs of the fallacious will note the personification — even the sexual identification — of ‘Nature’]

THE PRINCIPLE OF OCCAM’S RAZOR IS THAT THE SIMPLEST EXPLANATION IS BEST

William of Occam (or Ockham), who died about 1349, defended evangelical poverty as a Franciscan against Pope John XXII, and spent some time in prison at Avignon on a charge of heresy in 1328. In the popular mind, he is unfairly remembered for his enunciation of the principle of parsimony, or Occam’s Razor, by which ‘entities must not be unnecessarily multiplied’. The simplest explanation is the best provided but *only if* it covers all the known facts. Instead of reasoning from universal premises passed down from a higher authority, we should generalize from natural observations, a doctrine later espoused by Francis Bacon, Hobbes, and indeed all empiricists.

Occam’s epistemology rejected any relation between knowledge of the universe and knowledge of God, and denied

any possible human knowledge of divine psychology. He equally rejected Thomist ontology and St. Augustine's belief in eternal ideas which constitute the archetypes of the universe in the depth of divine essence, and Occam denied the usefulness and truth of the speculations of all the great Doctors of the Church.

Occam was one of the main agents for the dissolution of the medieval synthesis of religion and philosophy which culminated in the rise of modern science and technology in the face of opposition from monotheistic religions.

Sources include: Dagobert D. Runes, *Treasury of philosophy* (New York, 1955).

THE WORLD HAS A DIFFERENT, 'OCCULT' HISTORY

The Irish journalist and hypnotist J. H. Brennan has written *An occult history of the world*. Volume 1 (London, 1976) offers a refreshingly eccentric view of world history, which takes into account the theosophical works of Madame Blavatsky, bizarre Stonehenge theories, several disparate explanations of the Pyramids of Gizah, and the myth of Atlantis, together with a resumé of the main points from Erich von Däniken, all familiar to readers of *A Dictionary of Common Fallacies*, volume 1.

Mr Brennan summarises his esoteric history of the world as follows:

1. A knowledge of the evolutionary process existed many thousands of years before Darwin published his *Origin of species*.
2. 'Blind' evolution, such as Darwin postulates, actually began on this planet, in the oceans, something more than 2,000 million years ago, and over a period of 300 million years produced relatively complex sea creatures. [This view tallies to some extent with orthodoxy]
3. An extra-terrestrial race — or races — existed in our solar system and may have inhabited the Moon.
4. These aliens were far from any life form that we should recognise as such. They were not a product of any animal or vegetable evolution, but consisted of energy patterns and may, in some sense, have 'fed' off the Sun.
5. A pressing concern of this race was the establishment of intelligent, physical life on Earth. [But for which conceiv-

able motive?]) With such a project in view, an invasion of our planet was mounted by the extra-terrestrials about 2,000 million years ago.

6. Examination of native life forms convinced the aliens that such forms were unsuited to the evolution of intelligence. They were consequently destroyed. [But how?]
7. At the time the planet was 'disinfected', vast geological upheavals, either natural or provoked, produced areas of dry land on the surface of the Earth. [If natural, how could one explain the breathtaking coincidence? If provoked, how to explain the method of provocation?]
8. A limited number of the aliens undertook the first step towards the creation of a new terrestrial race in a variety of selected environments.
9. The prototypes of this new race were actually drawn, or projected, out of the essence of the aliens themselves.
10. As such, the prototypes were non-material. They consisted of energy-patterns probably not so very different from those of the original aliens. They had, at this stage, neither self-consciousness nor intelligence and were looked on as incomplete.

To offer alternatives to existing theories or facts or systems, it is first of all necessary to indicate in which ways the existing patterns of knowledge are inconsistent, and to show that the improved patterns are consistent. Mr Brennan has failed in the former objective as signally as in the latter, and we shall have to continue to modify our views of cosmology, astronomy, geology, and prehistory from the corpus of what scientists can already generally agree on. The rejection of findings, by thousands of scientists all over the world, which are mutually consistent, must be regarded as an exercise in science-fiction rather than as a viable new theory.

THE ODIC FORCE

In 1845, the *Researches* of the physicist Karl von Reichenbach appeared as a special volume of the respected *Annalen der Chemie und Physik*. For twenty years, he argued the existence of a physical force which could be felt or seen only by 'sensitives'. Despite the increasing scepticism of scientists who questioned his assumption that *any* given force can be perceived *only* by sensitives, Reichenbach managed to obtain a hearing in Berlin in 1862 before a commission of seven

experts. He complained bitterly that odic reception was worse in Berlin than in his native Vienna, and blamed the climate. Whatever the reason, when an independent expert brought his own magnets to make the current reversible and obtain a degree of control, Reichenbach's sensitives (mostly neurotic young women) failed to tell positive from negative, or even whether the current was on or off.

The independent commission found: "That the demonstrations of Baron von Reichenbach have in no way established what they were intended to show, and give no proof of a new natural force".

Joseph Jastrow's verdict on 'Od' and the 'Odic Force' is as follows: "The diagnosis of the 'case of *Od*' turns upon three data: first and dominant is the conviction that there is an undiscovered force; second is the rationalized search for it, its properties to be determined by physical and chemical research; third is the reliance upon peculiarly constituted sensitives to demonstrate it. The first is pure assumption; the second is the approved procedure, *if* rightly carried out; the third is a fateful error".

It is curious in this connection to note the science-fiction novel *The Coming Race* (London, 1871), by Edward Bulwer-Lytton (1803-73), about a subterranean race which has achieved a high degree of creativity and civilization through using *Vril*, an energy embodying all the natural forces, and reminiscent (in the claims made for it) of *Od*. Connoisseurs of fallacies will cherish the fact that, having been told about *Vril*, the extraordinary Mme. H. P. Blavatsky (the theosophist) assumed that it was real, and not only claimed that it was employed by the lost Atlanteans, but that it was the energy used in the Keely motor! (q.v.).

Sources include: Joseph Jastrow, *Wish and wisdom* (New York, 1935).

OOPARTS AND ANCIENT TECHNOLOGY

According to René Noorbergen's *Secrets of the lost races* (New York, 1977): "The major assumption of orthodox historians — that our civilization is the result of gradual development from primitive beginnings — can now seriously be challenged. Ooparts, Biblical history, archaeology, geology, paleontology, and ordinary level-headed thinking have guided us in that direction".

Noorbergen discards the theories of the von Däniken school which attempt to show that civilization on Earth is due to superior aliens from outer space. He attempts to show that civilization on Earth is due to superior Earthmen in ancient times. The term 'ooparts' is defined as 'out-of-place' artefacts, allegedly found in geological strata inappropriate to them. "Is it possible", enquires Noorbergen excitedly, "that the muted voice of the unknown past is trying to get through to us? Is it possible that these ooparts bear testimony to the existence of a super-civilization of human origin and developmnt at some distant point in the history of mankind?" No sooner asked than answered. Yes. How did the superior civilization come to an end, then? Answer: the Biblical flood. [Readers of volume 1 of the present *Dictionary* will be familiar with the refutation of the myth of a single, universal, literal Flood].

Chapter-headings such as 'Advanced aviation in prehistoric times' and 'Nuclear warfare among the "primitives"' indicate the imaginative scope of a work citing among its sources the writings of Berlitz and Charroux (qq.v.). The level of scholarship may be judged from Noorbergen's notion that, because two of the three elements in the Chinese word for 'ship' [chuan²] are radicals meaning 'eight' and 'mouth', the Ark of the Flood story carried eight persons! He also approvingly quotes a theory that a Chinese Noah was the ancestor of the Chinese.

Noorbergen is taken in by the forged 'Stanzas of Dzyan' of theosophy. He is wildly inaccurate on the origins of the great sculptures on Easter Island (q.v.) and altogether *Secrets of the lost races* might usefully represent in any collection of 20th-century literature that hard core of pseudo-science resistant to careful analysis of the evidence and scientific criteria, whether historical or experimental.

THE FIRST CHINESE WAR OF 1839-42 IS CORRECTLY CALLED THE OPIUM WAR

Opium may have been one of the pretexts, but the 'Opium War' was really caused by a concatenation of circumstances related to the British right to trade in Kwangtung (then known as Canton).

The Emperors of China were always reluctant to deal with foreign merchants, who were limited to the port of Kwangtung and could communicate with local officials only through a

Chinese mercantile association. However, local merchants and government officials derived great profits from the opium trade before the importation of opium was prohibited by an Imperial Edict of 1800 and, illicitly, also after 1800. Opium smuggling was a thriving trade, with the connivance of both merchants and corrupt officials. In March 1839, the Chinese had demanded that all opium held by the British in Kwangtung and in depôt ships offshore should be surrendered.

The British Superintendent of Trade, Captain Elliot, complied with this demand, handing over opium then valued at more than £2 million. But the Chinese then demanded that foreign merchants should sign a bond agreeing that, if any opium were found on board a British vessel thenceforward, the guilty would be executed and ship confiscated, and it was this additional demand which made the crisis deteriorate to sparking point. War was declared when the Chinese demanded that a British subject be punished for killing a Chinese in a brawl on 7 July 1839. Great Britain did not in fact ask to import opium after the war was over, neither was any such request incorporated in the Treaty of Nanking of 1842.

Sources include: W. C. Costin, *Great Britain and China, 1833-1860* (Oxford, 1937); and Historical Association, *Common errors in history* (London, 1951).

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“El prudente saca fruto de los ajenos errores”. (The prudent profit from the mistakes that others make) —
JOAQUÍN SETANTI

PAE AND THE COMING STRUGGLE, 1853–68

David Pae (1828–1884) caused a worldwide sensation with his 32-page pamphlet *The coming struggle among the nations of the Earth* (London, 1853), which predicted the triumph of Britain and America, using prophecies culled from Ezekiel, Daniel, and Apocalypse. The Anglo-Saxon mission was nothing short of Messianic to the intemperate Pae, who envisaged a conflagration lasting fifteen years, and culminating in a Last Judgment which would see the victory of the British and North American peoples. Pae quickly followed his best-selling tract with a supplement, *The coming rest for the nations of the Earth* (Edinburgh, 1853).

Angry refutations of Pae's absurd prophecies included *An answer to a pamphlet* [by Robert A. Purdon] (London, 1853) and *The fallacies, absurdities and presumption of "The coming struggle" and similar millenarian vaticinations* (Edinburgh, 1853), followed by *The coming struggle again: a refutation of the supplement to The coming struggle*, by Tekel [i.e. J. Wright?].

Other countries were equally entitled to a destiny in the future of the world. The Francophile approach was summed up by James Compigné Chase in *The approaching crisis: or, The mission and destiny of France, in the revival of the old Roman Empire* (London, 1854).

Of course victory in a 'coming struggle' did not actually come. But then neither did the Fascist Paradise of Hitler's Germany; nor the 'withering away of the State' in Stalin's Russia or Mao's China; nor the unblemished conquest of Islam (the name really *does* mean 'surrender') in Khomeini's Iran. Whenever anyone tells you that he or she is about to

create a paradise on Earth, run a mile if you're not agile enough to run two.

THE PEARL HARBOR DISASTER COULD NOT HAVE BEEN WORSE

Military historians teach that victories are not always as sweeping as they might have been, and that defeats are not always tragedies: they might well have been worse. This is in fact precisely the case with Pearl Harbor, though few Americans can be persuaded to see it that way.

Briefly, the Japanese attacked the Pacific Fleet while the latter was still in harbour on 7 December 1941, and inflicted a defeat. However, as Leo Rosten showed in *World* magazine (1 August 1972), after strategists had already made the point in more scholarly publications, the loss to American ships would almost certainly have been far greater if the fleet had been at sea. In harbour, many ships were repaired after attack. At sea, many more lives and ships would have been lost. The Japanese boats were faster than the American boats, and the Japanese had six aircraft carriers against one on the American side.

PHRENOMAGNETISM

The Scottish surgeon James Braid (1795–1850) thought that a valid medical technique (also called phrenomesmerism) consisted of passing an operator's fingers over the scalp of a hypnotised patient. The patient then feels the sensation or emotion associated with the phrenological organ so touched, although Braid's physiological explanation (to use Lewis Spence's understatement in the *Encyclopaedia of occultism*, (New York, 1960) "is a somewhat inadequate one". It can be read — if anyone feels the desire to do so — in *Neurypnology* (London, 1843; 2nd ed, *On hypnotism: Neurypnology*, London, 1899). See also ANIMAL MAGNETISM.

THERE WAS A PIED PIPER OF HAMELIN

Well, if there was a Pied Piper of Hamelin, (the German place-name is really Hameln) there was also a Pied Piper of Lorch, a Pied Piper of Brandenburg, and pied pipers with the gift of spiriting away children in Far East and Middle East legend.

In other words, there was no historical pied piper at all.

Sabine Baring-Gould, in *Curious myths of the Middle Ages* (2nd ser., 1868) found the piper tradition in Greek myth as Apollo (but he must have meant Pan), and in Sanskrit myth before that. He took the myth to refer to the wind in the reeds and thus to be as universal as the wind itself. The story has been attributed to the bubonic plague ('pied' meaning 'spotted'), carried by the rats to the children and then away, 'over the hills'. Robert Browning's poem lent credence to popular views of the legend's historicity. Some writers believe that the story derives from an actual case of child abduction, and others that it derives from the historical 'Children's Crusade' (1212), in the course of which children from France and West Germany marched to the Mediterranean shore with the intention of sailing to the Holy Land after the disastrous failure of the Fourth Christian Crusade (1202-4). The Children's Crusade is a genuine historical fact (though the Crusade never really began in any but a propagandistic sense), and has been described by G. Gray in *The Children's Crusade* (New York, 1870) and elsewhere.

Sources include: E. Cobham Brewer, *A dictionary of phrase and fable* (Rev. ed., New York, 1964); and *The Oxford dictionary of the Christian Church* (London, 1957, *sub voc.* 'Children's Crusade').

IN ARCHITECTURE, THE TERMS 'PILLAR' AND 'COLUMN' ARE INTERCHANGEABLE

How many popular writers on travel and famous buildings can tell the difference between a column and a pillar? A column is always cylindrical in plan. A pillar, on the other hand, need not be cylindrical in plan. The two words are used interchangeably in hundreds of major reference works, including for example Arnold Whittick's *Symbols* (2nd ed., London, 1971).

Source: John Fleming and others, *The Penguin dictionary of architecture* (Harmondsworth, 1966).

PILTDOWN MAN IS THE 'MISSING LINK' BETWEEN APES AND MEN

The 'head' of a prehistoric man 'found' at Piltdown in England in 1912, was hailed and published as the vital 'missing link' between apes and men.

The forgery was exposed by J. S. Weiner, K. P. Oakley and W. E. Le Gros Clark in *Bull. Brit. Mus. (Nat. Hist.) Geol.*, vol. 2, no. 3, 1953, pp. 139–46. The solution began with relative dating techniques, and was concluded by the chronometric method of radiocarbon. Bowie and Davidson's radiometric assay of the Piltdown specimens agreed with results from fluorine analysis, showing that the cranium is post-Pleistocene, and the animal remains are derived from varied geological sources. The jawbone and tooth are modern specimens faked to match fossilized human skull bones.

It is still not quite clear to whom we owe this intriguingly well-planned fraud, though J. S. Weiner (*The Piltdown forgery*, London, 1955) claims it is to Charles Dawson.

Sources include: Ronald Millar, *The Piltdown men* (London, 1972); and Don Brothwell and Eric Higgs (eds.), *Science in archaeology* (2nd ed., London, 1969, pp. 39–42).

PLANTS GROW BY THE FORCE OF LOVE

This fallacy derives from the fact that people who love plants spend more time and money, and usually have more accurate and profound knowledge of plants, than people who do not love them so much. But then this applies to all other fields of endeavour, too, so there can be no reasonable grounds for asserting that plants respond in some 'psychic' or supernatural way to careful, knowledgeable attention. They respond naturally to good treatment in the same way that dogs kept by knowledgeable owners are better fed, groomed, and trained than dogs owned by the ignorant or uncaring.

The Findhorn Community's *The Findhorn Garden* (1975) claims not only that their plants grow better than elsewhere — which might well be true, given the loving attention described above. The book also claims that fairies live at the bottom of the Findhorn garden in a very literal, though spiritual, sense. One might justifiably ask for evidence more concrete than capital carrots or better broccoli before one submits atavistically to the childhood fascination with faery.

But why spoil such a fantasy world? Does it matter if Eileen Caddy called herself 'Elixir' and claimed divine guidance for establishing a community at Findhorn, and for co-operating with plant-devas or fairies in the Findhorn Garden? Are there not worse ways to live?

Most of those subject to recurrent hallucinations are placed under medical supervision of some kind, and most of those believing in fairies are subject to mild ridicule. It seems that Findhorn and its community are immune to criticism, and this must be disturbing at a time when orthodox Christianity is under increasing pressure, and millions are seeking 'new age' religions to assuage some kind of hunger. Having identified beliefs as fallacious, it is undesirable to foster them actively or passively to watch while others do so. It must be possible to pursue the wholly admirable ecological aims of the Findhorn Community without a silly theology.

It is important to realise that every age has its believers in the soul of plant life. Perhaps the most eminent of all was Gustav Fechner (1801–1887), a professor of physics at Leipzig whose theories were attractive at exactly that moment (1848) when the first wave of spiritualism broke out (as a result of the self-confessed fraudulent Fox sisters — see **SPIRIT-RAPPING**).

Fechner's *The soul life of plants* (1848) expresses the well-known concept that consciousness permeates the whole of creation, not merely those being we happen to call 'sentient'. The idea was old with Plato, and infiltrates most works of mysticism and crypto-science if they go on long enough.

Elementary psychophysics (New York, 1960) keeps the works of Fechner in print and accessible to the next generation of cruel vegetarians.

"PLAY IT AGAIN, SAM"

One of the most evocative lines from any film, quoted above from Humphrey Bogart's famous scene in the 1943 film *Casablanca*, directed by Michael Curtiz, refers to the song 'As Time Goes By', by M. K. Jerome and Jack Scholl.

The trouble is that Bogart never said it. I awaited the line with bated breath on a recent showing of the movie, and can confirm that the line really runs, "Play it, Sam".

Source: Liz-Anne Bawden, *The Oxford companion to film* (London, 1976).

PNEUMATOLOGY

'The study of spirits' is a pseudo-science invented in this form by an Estonian, the self-styled Baron Ludwig de

Guldenstubbé, whose magnum opus is *Pneumatologie positive et experimentale* (Paris, 1857).

On 1 August 1856, the Baron had the peculiar notion of discovering whether spirits could write directly, that is, apart from the presence of a medium. Let him take up the story. "Remembering the marvellous direct writing of the Decalogue, communicated to Moses, and that other writing, equally direct and mysterious, at the feast of Belshazzar, recorded by Daniel; having further heard about those modern mysteries of Stratford in America, where certain strange and illegible characters were found upon strips of paper, apparently apart from mediumship, the author sought to establish the actuality of such important phenomena, if indeed within the limits of possibility. He therefore placed a sheet of blank letter paper and a sharply pointed pencil in a box, which he then locked, and carried the key about him, imparting his design to no one. Twelve days he waited in vain, but what was his astonishment on 13 August 1856, when he found certain mysterious characters traced on the paper".

Nobody will be surprised — except possibly Monsieur le Baron himself — that what was found on the paper was in the *Estonian* language! He then tried again, without the box, placing the paper and pencil on a table of his own, on tombstones in Parisian cemeteries, on sculptures in the Louvre, and elsewhere. The Baron found signatures of the Apostle Paul, Euripides, Plato, Cicero, and Marie Antoinette, and then even letters from the illustrious dead.

To this day we do not know whether Guldenstubbé was a fraud, or a willing victim of a hoax. But we do know that all the fallacies inherent in spiritualism survive — though they wax and wane — right up to the present day, among the ignorant, the morbid, and the exploiting charlatans. Milbourne Christopher's *Mediums, mystics and the occult* (New York, 1975) is a fascinating description of ways in which 'performances' of telepathy, clairvoyance and precognition can be stage-managed.

POLAR EMANATIONS

Albert de Rochas popularised in France the extraordinary views of Baron Karl von Reichenbach, including his concept of Odic Force (q.v.), and translated Reichenbach's works as

Le fluide des magnétiseurs (Paris, 1891) and *Les effluves odiques* (Paris, 1896).

Rochas's *L'extériorisation de la motricité* (Paris, 1896) was devoted largely to a defence of Eusapia Palladino (exposed in the *Journal of the American Society of Psychical Research*, vol. 29, 1935) and other alleged 'mediums'. But Rochas's real claim to fame is the claim that a 'sensitive' subject could distinguish the poles of an electro-magnet by its distinct polar 'emanation', the North Pole having a blue aura, and the South Pole a red aura. Jean Rostand, in *Error and deception in science* (London, 1960), has defined "the whole business — reported with so much scientific objectivity" as "utter non-sense from beginning to end".

MARCO POLO WROTE A HISTORY OF HIS TRAVELS TO THE EAST

Only in the figurative sense; the man who actually wrote Marco Polo's narrative of his adventures was a certain Rustichiello or Rusticiano of Pisa, who was in jail with Polo in 1298-9 after the victory of the Genoese over the Venetians in Curzola Bay. The original text as dictated seems to have been in *French*, however, not in the Venetian dialect, and the first printed edition appeared in *German* in 1477.

Source: *The Book of Ser Marco Polo*, trans. and ed. by Sir H. Yule. With a supplement by H. Cordier. (2 vols., London, 1920).

POLYNESIA WAS SETTLED MAINLY BY AMERICAN INDIANS

Thor Heyerdahl's best-selling *The Kon-Tiki expedition* (London, 1950) and the more scholarly *American Indians in the Pacific* (London, 1952) asserted that the inhabitants of Polynesia were originally emigrants from the western seaboard of South America. Linguistic evidence supports the theory of at least a limited colonisation of the type described by Heyerdahl, but the overwhelming evidence from physical anthropology, from linguistics, and (since 1950) also from archaeology, is opposed to the Heyerdahl theory.

It is becoming increasingly clear that migrations were numerous, spread over a long period of time, and affected many island groups in different ways. Polynesia was

apparently settled principally from the North Moluccas in Indonesia and/or from the Philippines about 2,000 B.C., and — much further back in history — also from southern China. The majority of Polynesian settlers came from South East Asia — they came eastward, not westward.

Sources include: William Napier *and others*, *Eastern Islands, Southern Seas* (London, 1973).

THE PACIFIC ISLAND OF PONAPE WAS COLONISED BY THE GREEKS

Bill S. Ballinger has added to our store of ignorance with *Lost city of stone: the story of Nan Madol, the 'Atlantis' of the Pacific* (New York, 1978).

He concludes that the ruined city of Nan Madol on the Pacific island of Ponape (Caroline Islands) was built by natives enslaved by Greek colonists. The Greeks abandoned the city when the slaves rebelled and deserted.

In the absence of any reference to any trans-Oceanic adventures in the extant Greek geographical literature (which would have been voluminous in its details of such a momentous voyage) or any archaeological authentication, we must refrain, so far, from endorsing Bill S. Ballinger's discovery.

PRIMROSE ON POPULAR ERRORS

It is a chastening experience (even if one is predisposed, like the present writer, to the likelihood of one's falling into error despite the greatest vigilance) to examine books of fallacies written centuries ago. See for instance the **VULGAR ERRORS** by Fovargue in volume 1, and in this volume the **VULGAR AND COMMON ERRORS** by Caroline Cornwallis. The farther back one travels in time, the more fallacies one discovers in the compendia of fallacies, and indeed Dr James Primrose's *Popular errours, or the errours of the people in physick* (London, 1651) is a lamentable example. Translated by R. Wittie from the original Latin, *De vulgu in medicina erroribus libri IV* (London, 1638; 2nd ed., Amsterdam, 1644), the book exerted a great deal of influence, much of it harmful. It is divided into four parts, the first on doctors, the second on diseases, the third on diet, and the fourth on remedies.

Superstitions then rife troubled Dr Primrose, but he was

often inclined to confuse them with observed facts. Take this passage, for instance, from chapter 47 of Book IV: "Not only the common people, but also very many Physicians, have used to lay to the soles of the feet young pigeons, or whelps cloven through the middle of the back, which custome I doe not in this place speak against, for I know it hath been oftentimes done, to the exceeding great commodity of the sick.

"... The Ancients, and also moderne Writers, do often prescribe them to be applyed to the head, seldome or never to the feet. This remedy is ordinarily used in the diseases of the braine, as the frensie, and madnesse".

The 'Explication of the Frontispiece' is of particular interest today as an indication of the forces against which a seventeenth-century doctor was obliged to struggle, and the confusion and ignorance in his own mind. So, today, we battle against the forces of intolerance, ignorance, and irrationalism, with tools of thought and knowledge only marginally superior to those of our forebears.

"Loe here a *woman* comes in *charitie*
 To see the *sicke*, and brings her *remedie*.
 You've got some grievous *cold*, alas! (quoth she)
 It lies sore in your *bones*, no part is free.
 His *pulse* is weake, his *urine's* colour'd high,
 His *nose* is sharpe, his *nostrills* wide, he'le die.
 They talke of *Rubarb*, *Sene*, and *Agaricke*,
 Of *Cassia*, *Tamarinds*, and many a tricke,
 Tush, give the *Doctors* leave to talk, I've brought
 A *pepper posset*, nothing can be bought
 Like this i' th' *Pothecaries* shoppe; alone
 It cures the Fever, Strongury, and Stone;
 If not there's danger, yet before all faile,
 Ile have a *Cawdle* for you, or *Mace-ale*:
 And Ile prepare my *Antimoniall Cuppe*
 To cure your *Maladie*, one little suppe
 Will doe more good, and is of more desert
 Then all *Hippocrates*, or *Galens* Art.
 But loe an *Angell* gently puts her backe,
 Lest such *erroneous* course the *sicke* doe wracke,
 Leads the *Physitian*, and guides his hand,
 Approves his *Art*, and what he doth must stand.
 Tis *Art* that God allowes, by him 'tis blest
 To cure diseases, leave then all the rest".

POPULATION FALLACIES

Jack Parsons, of the David Owen Centre for Population Studies, has for many years concentrated on the confutation of common fallacies concerning population, beginning with *Population versus liberty* (London, 1971), which deals with the fallacy of individual liberty in the demographic context.

His principal work, however, is the invaluable *Population fallacies* (London, 1977). It touches on the question of liberty, then divides the rest of the ground to be covered into three. The 'common sense' fallacies comprise: unreliable figures; the unfathomable future; population and power; migration; and the large family. The 'scientific' fallacies discussed are those of the growth curve and the population cycle. Economic fallacies include those of the labour shortage, the ageing population, ever-increasing efficiency, increasing demand, increasing production, and unlimited economic growth. Professor Parsons is especially trenchant on the non sequitur 'more people, more wealth, better lives'. There seems to be little chance of his book's affecting the policies of those who occupy the corridors of power, but at any rate it is now possible for the common reader to avoid making wrong assumptions on population issues.

THE PORES OF THE SKIN 'BREATHE'

'Wash with our soap and let your pores breathe' run the popular advertisements by soap manufacturers who should know better and probably do.

Vilhjalmur Stefansson exploded this fallacy in *The standardisation of error* (1928), but of course the error remains standard: "The skin does not excrete any appreciable amount of harmful substances from the body, nor do the pores 'breathe'. Therefore your system is not purified by 'keeping the pores open' ". Stefansson goes on to defy the three-baths-a-day-fanatics: "A chief function of the skin is to protect the body; poisons, such as mercury, will not penetrate if the skin is oiled with its own secretions, but will penetrate if the natural lubricants have been washed away with warm water, soap, or other methods . . .".

CORRECT POSTURE CORRECTS ALL ILLS

Many naturopaths eventually arrive at a conclusion similar to

those of Mabel E. Todd (*The thinking body*, 1937) and Bess M. Mensendieck (*The Mensendieck system of functional exercises*, 1937): that good posture is better than bad posture. This is not news: good spinach is after all preferable to bad spinach. The fallacy arises when the advocate of good posture exaggerates beyond all reasonable likelihood the beneficial effects which will accrue from good posture.

The self-educated Australian Frederick Matthias Alexander (d. 1955) established a school in London in 1904, and made many distinguished converts to the Alexander Regeneration Technique taught there, among them G. B. Shaw, the philosopher John Dewey, and Aldous Huxley. After spending the war years in Stow, Massachusetts, Alexander moved back to England, establishing a new base at Bexley, in Kent. An Association of Alexander Teachers was set up at 3 Albert Court, Kensington Gore, London S.W.7.

Therapeutic successes have been claimed for the Alexander Technique in cases of migraine, fibrositis, slipped discs, sciatica, footache, and heart trouble: all by an improvement in posture. Three basic assertions are made:

1. People must keep still and let the natural reaction to any kind of situation and stimulus occur of its own accord.
2. Man is One, and there is a localized seat of this psychophysical integration — a steering wheel for *all* functions of the organism, a 'central control'. This 'central control', announced by Rudolph Magnus of Utrecht in his work on posture entitled *Körperstellung*, is the region where the head joins the neck. From this point, according to Magnus, the entire muscular system of animals is controlled.
3. Every living organism from plant to man is subject to two opposing lines of power running through it: gravity pulls it down — the antigravity-force of the organism bears it up. Correct balance of the head on the spine allows the antigravity-force to flow through us freely, counterbalancing gravity. [Any more of this and readers will be in danger of losing their antigravity].

Professor J. H. Robinson of Columbia University has written that Alexander's Technique could "free people from ill health and depression, re-model the aged, and teach people how to work with the maximum generation of vital energy and the minimum expenditure of their resources". It could also free the human system from "stagnant eddies in which toxins

can accumulate". Needless to say, there is not a shred of experimental evidence to justify any one of the wilder claims made for the Alexander Regeneration Technique or for any similar medical cult, yet such fantastic cure-alls continue to attract hundreds of new adherents every year, and one — Ruth Borchard — even managed to publish an article on Alexander, 'A way to spontaneous living' in *The Humanist* for June 1963.

Sources include: Wilfred Barlow, *The Alexander Principle* (London, 1973) [Wholly pro-Alexander].

THERE WAS A MEDIEVAL PRIEST-KING CALLED 'PRESTER JOHN'

Prester (Presbyter, or Priest) John was a legendary Christian king or emperor believed in the Middle Ages to reside both in Asia and in Ethiopia. The first known mention of his name occurs in the 12th century, in the chronicles of Otto von Freisingen.

Augustus de Morgan, in *A budget of paradoxes* (2nd ed., vol. 1, Chicago, 1915), quotes from a rare tract by a French Count, 'S. C. de V.,' entitled *Recherches curieuses des mesures du monde* (Paris, 1626) which demonstrates full belief in the existence of Prester John, who also figures in Lodovico Ariosto's epic poem *Ariosto furioso*, Grail stories, and in the spurious travel books of 'Sir John Mandeville'. Pope Alexander III (d. 1181) sent the non-existent king letters by a special messenger, who is believed never to have returned. The situation of the messenger recalls several stories of Jorge Luis Borges, perhaps, or Dino Buzzati's novel *Il deserto dei Tartari*.

SIR ROBERT WALPOLE SAID "EVERY MAN HAS HIS PRICE"

The first reference to this well-known 'saying' by Walpole apparently occurs in a report of a speech in November or December 1734 according to A. F. Robbins in the *Gentleman's Magazine* (no. IV, pp. 589-92 and 641-4), but the report was roundly denied by Horace Walpole as a fabrication.

Morley wrote in chapter 6 of his *Life of Sir Robert Walpole* (London, 1889): "Walpole has no doubt suffered much in the opinion of posterity as the supposed author of the shallow and

cynical apophthegm that every man has his price. People who know nothing else about Walpole believe and repeat this about him. Yet the story is a pure piece of misrepresentation."

He never delivered himself of that famous slander on mankind. One day, mocking the flowery and declamatory professions of some of the patriots in Opposition, he insisted on finding self-interest or family interest at the bottom of their fine things. "All these men", he said "have their price". If Morley's quotation is correct, then the "Every man has his price" saying commits the fallacy of mistaking the part for the whole.

PRIDE GOES BEFORE A FALL

'Pride goeth before a raise', wrote Ogden Nash, and his sly aphorism at the expense of the Old Testament (Proverbs, xvi, 18) was as mistaken as the supposed original, 'Pride goeth (or goes) before a fall'. The Latin version of the Hebrew original familiar since the Middle Ages runs "Contritionem praecedit superbia: et ante ruinam exaltatur spiritus", which might be rendered "Pride goes before contrition, and hauteur before destruction". The popular misreading eliminates the crucial fourth, fifth, sixth and seventh words of the above translation.

PRINTING FROM MOVEABLE TYPE WAS INVENTED BY GUTENBERG

In the *Novum Organon*, Francis Bacon attributed the invention of printing, gunpowder and the magnet to 'the moderns', by implication Europeans. J. B. Bury, in his *Idea of progress* (London, 1920), writing three centuries later than Bacon, awards the 'Moderns' the palm over the 'Ancients' precisely for those three inventions.

"Yet nowhere in his book", complains Joseph Needham, "is there even a footnote pointing out that none of the three was of European origin". Printing, gunpowder, and the magnet, were all invented by the Chinese.

As late as 1952, writing in *The Times*, the then Keeper of Oriental Books and Manuscripts in the British Museum stated that, while block-printing was known and used in eighth-century China, it was left to Europeans to devise printing with moveable types.

"This is of course nonsense", observes Dr Needham. The

first known user of moveable types was “Pi Sheng (*fl. c.* A.D. 1060), who used porcelain or earthenware, while the Koreans were doing a good deal of printing with copper or bronze founts at the end of the fourteenth century, i.e. well before the time of Gutenberg. Yet the Museum of Printing at Mainz contains no reference to the Chinese inventions, and organizers of commemorative exhibitions in our own country have generally been loth to acknowledge them”.

Sources include: Joseph Needham, *Within the four seas: the dialogue of East and West* (London, 1969).

THE ROMAN CATHOLIC LIST OF PROHIBITED BOOKS WAS EFFECTIVE

The normal effect of banning the importation of goods is to increase the rate of smuggling, and the normal effect of prohibiting books is to increase the demand for them. Such indeed has always been the case with the *Index Librorum Prohibitorum*, issued by papal authority since 1559. In the later Middle Ages, the suppression of heretical writings had been entrusted to papal inquisitors or, where there was no inquisitor, to local bishops. While printing presses were few and their output small, control over them remained partially effective from the middle of the fifteenth century over the following hundred years. But the proliferation of presses and the rapid increase in book and pamphlet production from the middle of the sixteenth century combined to render attempts at total control ineffective. Local censorship was replaced after the Council of Trent by centralization in the *Index* from Rome, but frequent updating of the *Index* never kept pace with the flood of writings deemed ‘heretical’, from the writings of Luther, Wyclif and Huss, to the entire output of the genial sceptic Desiderius Erasmus of Rotterdam.

As Denys Hay writes in John Carter and Percy H. Muir’s *Printing and the mind of man* (London, 1967), the Index “entirely failed to prevent the books which it condemned from penetrating even areas obedient to Rome. Elsewhere, among Protestants or (later) among *libres penseurs* or ‘progressives’, the knowledge that a book was in the *Index* constituted a positive reason for reading it. Nor were princes and town magistrates much more successful in suppressing books which they judged to be seditious or immoral; it should be remem-

bered here that with printing came pornography. There were many attempts at state supervision of unwelcome works. The wary, ingenious and covetous printer defeated them all, though not without occasional danger to himself and not without leaving behind some bibliographical puzzles. It had not been easy to burke a manuscript book. It was impossible to stifle print. In Milton's *Areopagitica* the doctrine of freedom of publication was given canonical form. The printed book thus differed from the manuscript book by appearing in numbers so large that suppression was in practice impossible, by presenting in general a more reliable text (supported when appropriate by footnotes, indices and other apparatus), by lending itself easily to collection in public and private libraries and to access through bibliographies and periodical reviews".

DIVINE PROPHECY

One of the central fallacies inherent in discussing divine prophecy (for secular prophecy see volume 1, pp. 205–6) is that those unravelling the 'mysteries' are never divine themselves, yet presume to possess the key to unlock the divine secrets. Upon whose authority this is done they never trouble to make clear.

Thus, in *Modern world events in the prophecies of Daniel* (1962) published by the Inspired Word Association of Hull, Yorkshire, Arthur Longley satisfies himself — but presumably few others — that he is the infallible guide to the Old Testament Book of Daniel, interpreting "the prophecies of Daniel exclusively from within the Bible and mainly from within the Book of Daniel itself. This method of exegesis is explained in Chapter One as that which Paul declared to be the Holy Spirit's own way of teaching the things of God".

However, it is impossible to find 'exclusively from within the Bible' the North Atlantic Treaty Organization, the Common Market, World War II, and Middle East Nationalism. This does not prevent Arthur Longley from discovering allusions to all of these bodies, movements, and historical events within Daniel.

The prophet Ezekiel is drawn in to bolster the argument wherever Daniel cannot oblige. Because Arthur Longley is an anti-communist, he reads an anti-communist message into the Book of Daniel (and all other parts of the Bible), despite the

fact that the Marxism to which Arthur Longley alludes could not conceivably be foreseen by a Christian God — or, if foreseen, was not for some reason prevented from coming into existence. In fact, some scholars have suggested that the Essene fanatical group to which they allege Jesus belonged was a proto-communist cell.

Daniel, in the view of Arthur Longley, predicted the defeat of world communism. The reader is left to judge whether this assumption tallies with the texts quoted in support. "When, however, at the very end, the communist-bloc make their thrust southward in open violation of the guarantees, according to Ezekiel, chapter thirty-eight, then the whole fabric of world peace will burst. Then also, Christ will return to take over the nations. *'And there were great voices in heaven, saying, The Kingdoms of this world are become the kingdoms of our Lord and of His Christ: and He shall reign for ever and ever'*" (Rev. 11:15). Of the communist-bloc gathered to exterminate Israel at the end, God says through the prophet: *"And I will plead against him with pestilence and with blood; and I will rain upon him, and upon his band, and upon the many people that are with him, an overflowing rain, and great hailstones, fire and brimstone"* (Ezekiel 38:22). Of the communist Little Horn, Daniel says, *"They shall take away his dominion to consume and to destroy it to the end"* (7:26). Also, *"He shall be broken without hand"* (8:25). All these passages of Scripture describe the end of world-communism — at the return of Christ to rule the world".

Or not. According to the Rev. John Edgar M'Fadyen, in Peake's *Commentary on the Bible* (London, 1928, p. 517), Ezekiel "may be thinking of prophecies like Zeph. 1, Jer. 3-6, with their intimations of Scythian invasion. Then, when those motley hordes were gathered on the soil of Israel, there would come a fearful earthquake and Yahweh would send every sort of terror . . . which would inspire those alien hosts with supernatural panic culminating in their mutual destruction".

So far from being the 'communist' Little Horn of Arthur Longley, the 'Little Horn' of Daniel is unquestionably, in the view of the Rev. H. T. Andrews (also in Peake's *Commentary*), none other than the arch-persecutor of the Jews Antiochus Epiphanes, and it is thus his 'dominion' that will be consumed and destroyed.

Now Mr Longley may believe that prophecy is literal: that

is, in the case of Daniel's prophecy above the reference is to four actual beasts and ten actual horns; or, he may believe that it is symbolical, in which case the 'little horn' in Daniel VII can be Antiochus Epiphanes; or, he may believe that it is allegorical, so that neither an actual horn nor Antiochus is intended, but a totally different but parallel character. It is the muddled thinking of the allegorical approach — the easiest to 'prove' and the hardest to disprove — which lets down interpreters of prophecy like Mr Longley. The Scythians had been a threat to Israel, and continued to be a threat until their western branch was absorbed by the Sarmatians and eventually disappeared under the Gothic invasions. Would one call the *Goths* emissaries of Yahweh?

PROSTITUTES CAN BECOME STERILE BECAUSE THEY DEVELOP ANTIBODIES WHICH DESTROY HUMAN SPERMATOZOA

This hoary notion is based principally on moral grounds and cannot stand up to examination. It has been repeated as recently as 1977 by Dr J. Cohen in his *Reproduction*: "Some prostitutes . . . have been shown to have a high of anti-sperm antibodies of unusual kinds, and it is possible that in such cases all sperms are prevented from reaching the site of fertilization."

Dr T. E. Thompson, Reader in Zoology in the University of Bristol, has kindly supplied the following refutation of this fallacy: "While some studies have identified anti-sperm antibodies in the blood of prostitutes, others, no less reliable, have found comparable antibodies in blood from 'ordinary' infertile women. The figures given by the Kolodny team (1971, details given in Cockett and Urry's *Male infertility, workup, treatment and research*, New York, 1977), show anti-sperm antibodies to be detectable in 17% of prostitutes tested, 14% of non-prostitutes who were infertile, and 4% of nuns. These results plainly show, in Cockett and Urry's collective wording, that 'exposure to spermatozoa was not the only reason for antibody formation. Positive results were associated with the laboratory doing the testing, unknown factors, and possible cross-reacting antibodies'".

Dr Thompson further observes (personal communication, 5 June 1978): "There are other fallacious elements in this highly moral proposition. First, there is no evidence that

blood-borne antibodies can affect sperm-success in the short time between semen ejaculation and egg penetration. Second, the assumption is made that prostitutes copulate more frequently and receive more semen thereby than might be the case in other women, hence eliciting a greater risk of the production of circulating antibodies against spermatozoa; neither the assumption nor the conclusion is much more than a guess.

“Prostitutes do run a considerable risk of contracting a venereal disease, which in turn may lead to sterility, but that is another story”.

JOHN TAYLOR AND THE PSYCHIC CHILDREN

Professor John Taylor, in *Superminds* (London, 1975) and on television, has repeatedly asserted that spoon-bending of the Uri Geller type now carefully discredited by James Randi in *The magic of Uri Geller* (London, 1976) is accomplished by a series of ‘psychic’ children. A believer in the paranormal, but an intelligent critic of many charlatans, Stan Gooch, has described in his book *The Paranormal* (London, 1978, pp. 63–4), how Taylor showed a beautiful model of a dog made entirely of paper-clips to a conference as proof of a child’s ‘psychic’ powers. Taylor explained that the boy told him that he had put paper-clips loose in a box, shaken it, and produced the model by this process of shaking. The boy’s mother is an artist and Professor Taylor suggested to Stan Gooch that the boy had inherited his mother’s talent. Gooch writes: “I must say that quite another explanation occurred to me, as perhaps it will to the reader — that the boy’s mother, or the boy himself, had made the model in a perfectly normal way. I am of course not saying that either of them actually *did*”.

However, in the *New Scientist* for 14 July 1977, Professor Taylor intimated that the ‘powers’ of the children investigated have diminished in direct relation to the tightening of test conditions, and that he is no longer convinced that there is a metal-bending effect. Yet the damage is done: for every reader of the *New Scientist* aware of Professor Taylor’s retraction of his original assertions, a hundred thousand will have been impressed by the television claims — and will continue to be impressed.

PSYCHIC PHOTOGRAPHY

Due to the impressive advances in photography and cinematography in the last twenty years, much attention has been given to the question of recording events supernatural or inexplicable by natural causes on to film.

It would be so (literally) wonderful to discover that thoughts can be filmed that many thousands of events have been arranged with a view to producing such an occurrence. The best-publicised are the 'psychic photography' sittings arranged between leading parapsychologists and a Chicago hotel-worker named Ted Serios in the 1960s. Dr J. Eisenbud, then Associate Clinical Professor of Psychiatry at the Medical School of the University of Colorado, was finally persuaded by Serios in 1964 to test the 'thoughtography' by which Serios claimed to be able to transfer his thoughts on to film under laboratory conditions. Eisenbud's book *The world of Ted Serios* (New York, 1967) tried to prove that Serios could impress a mental image on to polaroid film by the effort of mental concentration. Serios was filmed during four sessions of roughly three hours each by Dr Ian Stevenson and Dr J. G. Pratt of the University of Virginia in 1968 and, as one might expect, the doctors (of the Department of Psychiatry) took a great many shots of a sweating, anxious face. The failure rate was alarmingly high, but there were a few apparent successes, none of which excluded the possibility of fraud by conjuring or other means. Furthermore, Serios was in the habit of holding a tube of rolled-up film paper in his right hand.

The Stevenson-Pratt trials were never finished, the conclusion of the scientists being remarkably restrained in the circumstances: "We remain fully aware that we have not been able to describe conditions and results which should remove all doubt that the Serios phenomenon is paranormal. But weighing the various features we have discussed, and considering again our failure to detect anything the least suspicious of conjuring, we think that our findings increase the importance of further research with Ted".

Dealing with the Serios case, Dr Christopher Evans has written in *Cults of unreason* (London, 1973, p. 190): "Apart from such obvious tricks as tampering with the negative in the development stage or allowing the light to enter the camera through one or other of its sides, it is not at all difficult to mark photographic film with radioactive energy. In this latter case

the trickster would merely have to arrange for a small piece of radioactive material to be near the camera — he could, for example, conceal it in a finger ring, and real, if rather diffuse, images would appear on film which had never been exposed to ordinary light. These and many other tricks have been used and, no doubt, will be used again in the production of thoughtographs of one kind or another”.

One is reminded of the sensational reports in the 1920s concerning the ‘psychic photographer’ William Hope, whose ‘wonderful abilities’ Sir Oliver Lodge had consulted and praised. In 1922, the investigator Harry Price spent some time with Hope, the leading light of the Crewe Circle of spiritualism. Unknown to Hope, however, Price made sure that his plates could not be switched by using plates which had been X-rayed with a photographic company’s trademark. In fact, of course, Hope *did* switch the plates, and produced a photograph of Harry Price with “a beautiful female ‘extra’ swathed in cheesecloth”. The X-rayed trademark was missing from the plate, so Hope — like all other self-professed psychic photographers so far studied under test conditions — was proved a fraud, by Price in his article ‘Cold light on spiritualistic phenomena’ (*Journal of the London Society for Psychical Research*, May 1922).

Sources include: I. Stevenson and J. G. Pratt, ‘Explanatory investigations of the psychic photography of Ted Serios’, in *Journal of the American Society for Psychical Research*, vol. 62, 1968, pp. 104—129.

PHILIPPINE PSYCHIC SURGERY

Members of the Unión Espiritista Cristiana de Filipinas claim to cure serious illness by psychic methods, the most advanced psychic healers becoming the best surgeons. In her uncritical *Mindpower* (London, 1976), Nona Coxhead states that a healer, having acquired the ‘gift of the spirit’, “approaches the patient in a trance-like state, focusing his mind-energy on what he is to accomplish and ‘attuning’ to the energy of the patient, on which he also draws”. Nona Coxhead refers specifically to the Rev. Tony Agpaoa, “whose fame as one of the Philippine healers has spread over the globe”. Agpaoa “has said that he could open the body of a patient without a drop of blood, but that his people would find it harder to

believe in *bloodless* psychic surgery than they do seeing the gore, tissue and organs”.

Two well-researched television documentaries, both shown before the publication of *Mindpower*, effectively demolished the case for the Philippine psychic surgeons. The first programme showed the healers’ point of view. This removed any suspicion of prejudice. The case rested on the actual changes in condition shown by British patients after treatment in the Philippines. The panel consisted of the patients’ own doctors, who were asked to note any improvement. Not only did the doctors observe no improvement — they might after all be considered partial: they observed no change whatsoever, as demonstrated in the second of Mike Scott’s documentaries, shown on Granada Television in February 1975.

Psychic ‘surgeons’ almost invariably ‘operate’ on the stomach or other soft areas of the body, producing handfuls of ‘tumours’ later discovered, on analysis, to be animal tissue palmed in by the ‘healer’. A close-up camera picture showed a healer with his fingers doubled under to fake entry into the body, after which the camera team was asked to withdraw.

The surgeons claim to be able to operate by instructions from the world beyond. However, the present world offers at least the favoured few delights of this world that include limousines and well-equipped homes. Many poor ‘healers’ working by a combination of luck and autosuggestion are undoubtedly sincere, though misguided. The reader may describe the remainder in any terms he feels appropriate. See also THE ‘MIRACULOUS CURES’ OF ZE ARIGÓ.

THE FOUNDATIONS OF FREUDIAN PSYCHO-ANALYSIS ARE LOGICALLY UNASSAILABLE

The successful error: a critical study of Freudian psychoanalysis (London, 1941) is by Rudolf Allers, Professor of Psychology at the Catholic University of America. Professor Allers, writing as a Catholic for a Catholic publisher, has nevertheless tried to put aside his personal prejudices against psychoanalysis, and his critique should be read by all those with an ever-open mind. The conclusion reached by Allers is “that psychoanalysis rests on several gross logical fallacies, all of which are of the kind known to logic as *petitio principii*.”

Psychoanalysis, in fact more than once, takes for granted what it claims to prove and surreptitiously introduces its preconceived ideas into its reasonings so as to give the impression that these ideas have resulted from facts and evident principles”.

The first fallacy is termed by Allers ‘the fallacy of resistance’. In Freudian theory, the term ‘resistance’ is more than a mere description of the objective finding, but actually implies many of the theoretical views characteristic of the Freudian system. “The observed phenomena — namely the interruptions occurring in the chain of free associations and the so-called efforts to be made by the person analyzed and the analyst — are viewed as a kind of ocular demonstration of resistance. Resistance itself, not the mere objective facts enumerated above, is what is ‘observed’ according the psychoanalysts. But all that they are observing is that no association occurs to the patient”. Allers goes on to remark that the belief of the participants that they are actually observing resistance is founded merely on their earlier acceptance of Freudian doctrine, and not on any objective fact.

The second fallacy described by Rudolf Allers is the alleged causal connection between the conscious mental phenomena (idea, feeling, dream, symptom, misspelling or others) and the ‘unconscious’ material brought forth in the course of analysis. Such a causal relation can be proved only in the case of abnormal symptoms which disappear after the unconscious phenomena have been made conscious; there can be no objective proof in a case involving no abnormal symptoms to begin with. “Because the psychoanalyst, before he even starts an analysis, is previously convinced that all relations he will eventually be able to establish are of the nature of causation”, writes Allers, “he discovers only such relations”. There are of course other relations, such as sense or meaning.

In a science, words may be used to denote only one idea or thing, such as the unique words and things ‘hydrogen’, ‘field vole’, or ‘differential calculus’. But, in Freudian psychoanalysis, ‘determination’ has at least four meanings: (a) a connection pertaining to logic and semantics, or signification; (b) a connection between two terms due to association; (c) causal determination, e.g. the rise of mercury in a thermometer is ‘determined’ by the caloric state of the surrounding medium; (d) emotional states are ‘determined’ by certain

contents of consciousness, another word used in this context being 'association'.

The third fallacy is the use of interpretation in Freudian theory and practice. There is no logical reason for connecting a memory arising from the unconscious with a mental fact of consciousness, *unless* the revival of the memory can be proved to cause the disappearance of the symptom. "Sometimes", writes Allers, "— seldom enough — the assent of the analyzed person may replace the criterion of therapy. This assent is not only very often not given, but even after analysis has been pushed back to the deepest layers of the unconscious, and after resistance has been very much reduced, such an assent is utterly without value, when the unconscious material refers, *e.g.*, to the prenatal phase of life". It goes without saying that such absorbing and fascinating studies as that of Freud on Leonardo da Vinci lack all scientific value when the analyst is dealing with symptoms that cannot disappear. He cannot prove that he is correct, but any truly scientific hypothesis *must* be testable.

Dr H. J. Eysenck attacks Freudian psychoanalysis *as a science* in *Uses and abuses of psychology* (Harmondsworth, 1954) and in its sequel *Sense and nonsense in psychology* (Harmondsworth, 1957). He argues that psychoanalysis is a religion rather than a science. The analyst frames his theories not as clear-cut hypotheses testable by experiment but as vague *obiter dicta* almost totally resistant to refutation, since they can always be reinterpreted. Like a religious apologist, the Freudian claims that there can be no valid criticism of his doctrines from outside Freudianism. "Every psychoanalyst must pass through a training analysis in which all his actions, dreams, and fantasies are interpreted in Freudian terms, and in which he forms strong emotional bonds with his teacher, bonds which predispose him to accept such interpretations as correct, and which will make it impossible for him to make objective, unbiased judgments about the true relevance of analytic concepts".

It is claimed that two-thirds of the analyst's patients recover, on average. Dr Eysenck, however, shows that so do two-thirds of neurotic cases receiving no treatment at all.

PSYCHOLOGICAL FALLACIES

One of the most exhaustive treatments of fallacies in psy-

chology also ranges much farther afield. Joseph Jastrow's *Fact and fable in psychology* (London, 1901) appeared before the boom in parapsychological studies and similar attempts to make spiritualism respectable before a critical modern audience. The eleven chapters cover: The modern occult (theosophy, spiritualism, alchemy, astrology); The problem of psychical research; The logic of mental telegraphy [now known as telepathy]; The psychology of deception; Hypnotism and its antecedents; The natural history of analogy; The mind's eye; Mental prepossession and inertia; A study of involuntary movements; and, The dreams of the blind.

Readers are referred to Jastrow's compendium for detailed illumination of fallacies in this field.

PURGATORY AND ST. PATRICK

The concept of purgatory, as a state of transition between bodily death and entry to paradise, or heaven, is present in some form or another in the Vedic religion of ancient India, in ancient Egypt, in the Jewish doctrine of prayer for the dead (2 Maccabees vii, 42 ff.), and in Greek and Roman mythology, occurring in Book VI of Virgil's *Aeneid*.

The early Fathers of the Church have conflicting opinions on the theological need for a state of purgatory (Augustine is especially self-contradictory), but from the *Dialogues* (iv, 39) of Gregory the Great (Pope from 590 to 604) the notion of purgatory became an integral part of Christian theology. Innocent IV wrote that *purgatorium* was a state of "temporary fire [in which] are cleansed not deadly capital sins, which must be remitted by penance, but those lesser venial sins which, if not removed in life, afflict men after death".

Dante Alighieri envisioned *Il Purgatorio* as a place with a definite geographical location, following Thomas Aquinas and Bonaventura, but the Greek Fathers disagree, believing it merely a spiritual state, without material fire.

St Patrick's mission to Ireland in the 5th century led him, so the story goes, to Lough Derg, County Donegal, where an entrance to purgatory was revealed to him in an island cave, as an inducement for the heathen Irish to become converted. A monastery was built there, and the Cistercian monks sedulously repeated the tradition for the benefit of visiting tourists over the centuries. The 'journey to Purgatory' from the island on Lough Derg was attested by Cardinal de Vitry,

Matthew Paris, Vincent de Beauvais, Thomas Brompton, Denys the Carthusian, François Bouillon, and the chronicler Giraldus Cambrensis (c. 1146–c. 1220).

Giraldus, from Pembrokeshire, states: “There is a lake in Ulster containing an island divided into two parts. In one of these stands a church of especial sanctity, most agreeable and delightful, but above all glorious for the visitations of angels and saints who have been seen there.

“The other part, covered with rugged crags, is reported to be the abode of devils, who perform their rites there. This part of the island contains nine pits or caves. Should anyone venture to spend the night in one of them (which has been done, we understand, by some bold men), he is immediately seized by the malignant spirits and tortured the whole night long, undergoing such torments that by morning hardly a breath of life is left in his body. It is said that anyone who has undergone these torments as a penance will not suffer the pangs of hells, unless he later commits a deeper sin”.

The tradition of St Patrick’s Purgatory is to be found not only in the Breviary of Ireland, but also in the Breviary of Paris (Paris, 1522), and the Breviary of Rome (Venice, 1524). But Father Lebrun, who investigated the story in some depth, found that the tale of the entrance to Purgatory on the little island of Lough Derg began as late as the 12th century: there is no mention of the wonder in Bede (8th century), and even the early 12th-century chronicler William of Malmesbury is silent on the subject. Apparently — though we cannot be certain — the first to mention the Purgatory was Jocelyn of Brakelond in 1180, who investigated at the request of the Archbishop of Armagh, and found a hole in the top of a mountain which he described as St Patrick’s Purgatory.

J. B. Salgues, writing in volume 3 of *Des erreurs et des préjugés répandus dans la société* (3rd ed., Paris, 1818), inclines to the view that the legend was created by Cistercian monks. In 1491 a visitor “passed the night in one of the reputed ‘caves’ of Purgatory without seeing or hearing anything” and reported the fraud to Pope Alexander VI, who quickly had the ‘Purgatory’ buildings destroyed. In the 16th century, however, the trick was revived, and the monks made a new hole to attract sinning tourists.

In the reign of James I, a commission was solemnly sent to enquire into the new hole. The commissioners found that “this

miraculous cavern, alleged to communicate with Purgatory, was no more than a small cell cut into a rock, and so dark that, when the door was closed, not a single ray of light entered”.

Pilgrims fasted for nine days, taking only bread and water, so that on the tenth they would be easily subjected to hallucinations and delusions. Readers will be able to correct me, but I believe that the first English-language physio-pathological explanation of such delusions is *An essay towards a theory of apparitions* (London, 1813) by John Ferriar (1761–1815).

THE PURITANS OF NEW ENGLAND PRACTISED RELIGIOUS TOLERATION

It was for many years held almost as a dogmatic truth that “the Puritan settlers in New England established religious freedom there.

“They have left unstained what there they found —
Freedom to worship God”.

This may almost be described as the reverse of the truth”, according to the Historical Association. In the Plymouth (Mass.) and Connecticut settlements, political rights were enjoyed exclusively by church members — that is to say, by the Puritan congregations. It was the terrible intolerance of the Massachusetts government (including flogging, deporting, and even executing their opponents) which led to the withdrawal of settlers under Roger Williams to Rhode Island, where for the first time religious toleration was permitted. It was this attitude which was despised by other New Englanders, who excluded Rhode Island from the New England Confederation.

Probably the most bitter persecutions in New England were directed against the Mormons: the prophet of the Latter-Day Saints was attacked by mobs and was shot at several times, being lucky to escape westward with his life.

Sources include: *Cambridge History of the British Empire* (vol. 1, Cambridge, 1929, ch. V).



“Quo magis cogito, magis dubito”. (The more I think,
the more I doubt) — FRANCISCO SÁNCHEZ

QUETZALCOATL WAS ST. BRENDAN

The astounding assertion, identifying the mythical Supreme God of the Aztecs with the (legendary?) traveller from Europe St. Brendan appeared from the pen of one Dominick Daly in the *American Antiquarian*, vol.II (1889), pp. 14-30. Daly's conclusions include these three: (1) Quetzalcoatl was a white man from across the Atlantic; (2) he taught religion to the Mexicans; (3) the religion he taught retained to after ages many strong and striking resemblances to Christianity.

St. Brendan, called 'The Navigator', is alleged to have been a bishop of Clonfert, in Ireland, and to have undertaken some sea voyages, though in 1759 'St. Brendan's Island' was satisfactorily explained as an effect of mirage. The *Encyclopaedia Britannica* (11th ed.) refers to his 'legendary voyage in the Atlantic', a fact not disproved by the recent voyage in emulation by Severin.

R

“Religion is still parasitic in the interstices of our knowledge which have not yet been filled. Like bed-bugs in the cracks of walls and furniture, miracles lurk in the lacunae of science”. — J. B. S. HALDANE, *Science and life* (London, 1968).

MARY TOFT GAVE BIRTH TO RABBITS AT GODALMING

A short narrative of an extraordinary delivery of rabbits, in the year 1726. Performed by J. H., Surgeon at Guildford (London, 1726) is the title of a pamphlet by the quack Nathaniel St. André who was certainly duped by Mary Toft and a local Godalming man called John Howard.

The sensation was so widely credited that within a short time rabbits were excluded from every dinner table in the Kingdom. Hogarth's print 'Cunicularii, or the wise men of Godliman in consultation' satirised the gullible readers of the time, and Jonathan Swift was quick to scuttle the fraud in a pamphlet: *The anatomist dissected: or, The man-midwife finely brought to bed. Being an examination of the conduct of Mr. St. André. Touching the late pretended rabbit bearer as it appears from his own narrative, by Lemuel Gulliver, Surgeon.*

Conjurors have proved for centuries that rabbits are the most silent and docile of small animals which can be secretly introduced to a stage or a bedchamber, and Swift laughed Howard and St. André out of countenance for many years after Mary Toft had confessed to the swindle.

RADIESTHESIA

M. J. Bricot of Lille adds to the anglocentric entry in volume 1 a valuable reference to 'Sciences et pseudo-sciences' by L. Cuénot in *Revue Scientifique*, vol.78, no.1, January 1940 (pp. 3-11), an article devoted largely to fallacies connected with dowsing and other radiesthetic pseudo-sciences.

Cuénot cites an amusing complaint in the March 1936 *Bulletin de l'Association des Amis de la Radiesthésie*: “98% des radiesthésistes sont en train de ridiculiser la radiesthésie” — this would presumably cover everyone but the writer of the article and the editor of the *Bulletin*.

Incidentally, in his attack on contemporary fads, Cuénot draws attention to an enormous ‘lizard’ 1.75 metres long reported from a forest in the High Pyrenees. Like the Swiss Tatzelwurm and the Scottish Loch Ness Monster, observes Cuénot, such ‘finds’ have excellent tourist value: “ce sont des animaux de vacances”.

RAUDIVE VOICES

Just as Ted Serios has claimed to be able in some manner to impress thought on to film, so Konstantin Raudive (1909-74) claimed to be able to record extraterrestrial voices on to tape. His book on the subject, *Breakthrough: an amazing experiment in electronic communication with the dead* (Gerrards Cross, 1971) is an exercise in credulity so bizarre as to become an object-lesson. Briefly, it is alleged that sounds of human voices heard either faintly or in garbled fashion are in fact those of spirits of dead persons of terrestrial origin, or alternatively the audible proof of visitors from outer space. In fact, of course, the phenomenon dates from the recent improvements in the quality of tape itself, and tape recorders, and from the rapid increase in the amount of broadcast and telecast information, often by satellite.

The naive frequently misunderstand broadcasts in languages other than their own, ascribing to them an origin from outer space!

‘Raudive’ voices were in fact noted as early as 1959, when such voices were reported by the Swede Friedrich Jürgenson. He believed that these voices were not only extra-terrestrial, but that they were speaking directly to him. All of this material can be read in Jürgenson’s Swedish-language *Rösterna från rymden* (Stockholm, 1964) and the German-language *Sprechfunk mit Verstorbenen* (Freiburg, 1967), but there is really no need for speculation, after the exhaustive essay on the subject by D. J. Ellis, ‘Listening to the Raudive voices’, in *Journal of the Society for Psychical Research*, no. 48, pp. 763, 1975, pp. 31-42. Mr. Ellis not only rejects all the supernatural claims by Jürgenson and Raudive: he offers

simple, direct explanations of the phenomena concerned which render alternative discussions totally unnecessary. He concludes: "None of the voices examined in these tests appeared — from the reports of the listeners — to be inconsistent with having originated, in the case of microphone recordings, from odd sounds or uncontrolled utterances by persons present, or, in the case of the radio recordings, from normal radio transmissions".

'RE' IS AN ABBREVIATION OF 'REFERRING TO' OR 'REGARDING'

A commercial letter might begin: "Re. your communication of yesterday's date. . .". This is often taken to mean "Regarding your communication. . .", hence the full stop after *re*. But *re* is not an abbreviation, and should be italicised (or underlined) as a foreign word. It is the ablative form of the Latin word *res*, meaning 'matter', 'thing', or 'affair', and in business means 'in the matter of . . .'.

'RED' SQUARE IN MOSCOW WAS SO CALLED AFTER THE RUSSIAN REVOLUTION

The name *krasniy* ('red', 'beautiful'), was applied to Moscow's Red Square long before the Bolshevik October Revolution of 1917, and has therefore nothing to do with the 'East is Red' slogan or the 'Red Flag' motif.

Incidentally, it is another common fallacy that there was only one revolution. There had been dozens of Russian revolutions prior to the Bolshevik victory, one of the most notable being the 1905 Revolution, which began with the Bloody Sunday massacre of 9 January (or 22 January, the Old-Style Russian Calendar being thirteen days behind the Gregorian Calendar of the West up to February 1918). Another error is to believe that St. Petersburg changed its name to Leningrad. In fact, St. Petersburg changed its name in 1914 to Petrograd, and only from 1924 became Leningrad.

FALSE REPUTATIONS

Historical judgements are frequently wrong, and almost invariably depend not so much on the actual deeds and saying and writings of the famous, as on the historian's bias, and on the reader's prejudices. Thus, it is inconceivable that an

American view of Mao Zedong (to use the new *pinyin* romanisation) will coincide with a Chinese view past, present or future. Examples of errors due to such prejudices can be found in the present volume under Aethelred and Bligh, but all historical biography should be read as sceptically as one would read current journalism, for many 'considered judgments' appearing in books are merely fossilized 'off-the-cuff opinions' originally written in haste for a newspaper or magazine deadline.

There are not as many reconsiderations of reputation in print as we need. Historical critics should update biased views of well-known figures every decade, perhaps on the lines adopted by the Calvinist Jacques Barthélemy Salgues. His *Préjugés des reputations* (Paris, 1830) dealt with the then current reputations of Mme. de Genlis, Robert d'Arbrisselles, Mme. de Maintenon, the Prophet Muhammad, Martin Luther, Cardinal Richelieu, Urbain Grandier, M. de Bonald, St. Dominic, Comte de Maistre, St Thomas Becket, the Abbé Lamennais, St Bernard, the Abbé Frayssinous, the King of Prussia, Mme. de Staël, Metternich, Wellington, and Talleyrand.

THE STAPLE FOOD OF INDIA IS RICE

Of course it is: every movie about the North-West Frontier, the British Raj, or maharajahs confirms the fact.

But, apart from a line of demarcation drawn from southern India to Bengal — where the staple diet is indeed rice — the rest of the country, including the great cities of Delhi and Bombay, enjoys *corn* as its staple food.

RICE-PAPER IS MADE FROM RICE

Rice-paper is not made from rice, but derives from the pith of the so-called rice-paper plant whose scientific name is *Aralia* or *Fatsia Papyrifera*.

RICKETS CAN BE CURED BY BAGS HUNG ROUND THE NECK

Rickets is a disease due to the deficiency of vitamin D found mainly in fats.

Common fallacious treatments in the past have been as varied as the quacks have been ingenious. A typical advertise-

ment for curing rickets, found in *The Intelligencer* dated 16 October 1664, runs:

‘SMALL BAGGS to hang about Children’s necks, which are excellent both for the *prevention* and *cure* of the Rickets, and to ease children in breeding of Teeth, are prepared by Mr. Edmund Buckworth, and constantly to be had at Mr. Philip Clark’s, Keeper of the Library in the Fleet, and nowhere else, at 5 shillings a bagge’.

There was apparently no harsher treatment for such frauds then than there is for more sophisticated pseudo-medical deceivers nowadays.

ROBINSON CRUSOE IS TO BE IDENTIFIED WITH ALEXANDER SELKIRK AND HIS ISLAND WITH JUAN FERNÁNDEZ

Harvey begins an account of the background to Daniel Defoe’s novel like this: “In 1704 Alexander Selkirk, son of a shoemaker of Largo, who had run away to sea and joined a privateering expedition under Capt. William Dampier, was, at his own request, put ashore on the uninhabited island of Juan Fernández. He was rescued in 1709 by Woodes Rogers. Defoe embellished the narrative of his residence on the island with many incidents of his imagination and presented it as a true story”. (*The Oxford Companion to English Literature*, 4th ed., Oxford, 1967).

The Historical Association, in *Common errors in history* (London, 1951), agrees that Selkirk lived alone for four years on Juan Fernández; that — despite the usual mistake — he was set down there at his own request and *not* shipwrecked, so that his whereabouts were known all the time he was there; and that Defoe met Selkirk after his return.

Yet the gap between history and fiction is much wider than is commonly supposed. Juan Fernández is situated in the South Pacific about 450 miles from the coast. “To anyone who maintains that it can be Crusoe’s island the answer is”. according to the Historical Association, “read *Robinson Crusoe*”. Its unlucky hero at the time of his voyage was a planter in Brazil, and set out across the *Atlantic* to obtain slaves from Africa. Storms drove him off course when he was north of the Equator, and the ship was *wrecked* on an uninhabited island in sight of the coast of the Guiana (according to Crusoe, though he later found it to be the coast of

Trinidad). Crusoe alone was saved, and lived for 28 years on his Island of Despair, which is closer to Tobago than to any other real island. Defoe's entirely fictitious island incorporated many facts about the West Indies — though he had not learnt them from Selkirk. The West Indies were a more potent source of imaginative fiction among non-West Indian writers than they are today and Defoe used these works as fodder for his own genius.

Finally, Juan Fernández had no natives from which Man Friday could have been drawn, and was never visited by cannibals in canoe-fleets from the mainland of South America.

KUMMER AND THE POWER OF RUNES

A strangely obnoxious book mingling racism and the occult is Siegfried Adolf Kummer's *Heilige Runenmacht* (1932), on the supposedly magic powers of runes, an ancient alphabet of northern Europe. It was published the year before Hitler's rise to power, and nobody should underestimate the influence of mysticism and the occult in German Fascism.

Kummer founded a school in 1927 to teach his runic theories to willing disciples, and led an 'Association of Invisible Aryans' to propagate the 'blood interests' of the so-called 'Aryan Germanic race'. The myth of the Aryan race originated in the writings of that excellent Oriental scholar and linguist Max Müller, whose *Lectures on the science of language* (2 vols., 1861-4) assumed first that there was an Aryan mother tongue, and secondly that there was consequently one Aryan race that used this single language.

The concept of a mother 'Indo-European' tongue has been very useful as a hypothesis to explain diverging features of Sanskrit, Latin, and Greek and their derivatives, for instance, but as H. H. Bender has explained (in his *The home of the Europeans*, Princeton, 1922), "not a line of Indo-European (Aryan) literature has been preserved, and not a single skeleton, inscription, weapon or other object has been identified as Indo-European. The problem is fundamentally a linguistic one and its solution must be looked for primarily in the province of comparative philology".

Kummer and his followers can be dismissed in the words of Ashley Montagu and Edward Darling's *The prevalence of nonsense* (New York, 1967): "We must soberly arrive at the conclusion that the Aryan 'race' is nothing but a piece of

verbal nonsense and without meaning. Professor [Louis L.] Snyder [in *Race: a history of modern ethnic theories*, Chicago, 1939] reasonably reminds us, 'When a language has spread over a large territory, there is no reason to believe that all people who spoke that language belong to the same race' —by which he means the same ethnic group".

S

“She forms and expresses an immense variety of opinions on an immense variety of subjects.” Mr Witterly of Mrs Witterly, in CHARLES DICKENS, *Nicholas Nickleby*.

ST. GILES’S CATHEDRAL IS PROPERLY SO-CALLED

We are reminded by Stuart Campbell of Edinburgh (personal communication, 12 June 1978) that St. Giles’s so-called ‘Cathedral’ is actually the High Kirk, since the Church of Scotland does not have bishops.

SALAD DAYS ARE THE HAPPIEST DAYS OF ONE’S YOUTH

Not so! Despite the nostalgic musical play by Sandy Wilson ‘salad days’ are the gauche, anxious, lonely days recalled by Cleopatra in Shakespeare’s *Anthony and Cleopatra* (I,v), when she remembers that her youthful days were ‘salad’ days because she loved badly, like a salad, green and cold. The implication is entirely pejorative: ‘salad days’ look forward to a maturity which is expected to be far more enjoyable.

SALIVA IS A DISINFECTANT

Retiring after a bloody conflict, the combatants are often said to ‘lick their wounds’, with the meaning that they are disinfecting open wounds by the application of their own saliva. Sir Alexander Fleming discovered lysozyme in human saliva, and lysozyme is an antiseptic, but it is not seriously recommended by a doctor as a remedy for open wounds. Shakespeare wrote (lines 915-6) in *Venus and Adonis*: “And there another licking of wound, ‘Gainst venom’d sores the only sovereign plaster”, and there is the tradition of Jesus’ curing a blind man with His spittle as evidence of the antiquity of the fallacy that saliva can cure blindness. Like blood,

the saliva is considered by primitive peoples in many countries to possess a kind of spiritual power. Thus, in *The discovery of witchcraft* (London, 1665), Reginald Scot recommends against the efficacy of evil spells that one should spit into one's right shoe before putting it on in the morning, or alternatively that one should spit into one's own urine.

Ritual spitting for good luck is still practised by those about to undertake a physical contest or a physical feat of some kind: as well as the forgotten superstitious benefit, it serves as a boost for confidence in the same way as the ritual 'war-dance' boosts the confidence of New Zealand 'All-Black' rugby union teams.

Saliva is not a useful or recommended disinfectant where any effective alternative is readily available.

SAP RISES

In the spring it is believed in the folklore that sap 'rises', and likewise in the autumn that it 'falls'. But in fact sap moves from the centre of the tree to the bark and back — never up or down.

NORTH AMERICAN INDIANS INTRODUCED SCALPING

Writing as 'C. W. Ceram', the archaeologist Kurt Marek has produced an excellent account of North American archaeology in *The first American* (New York, 1971). I wonder how many readers were as surprised as I to learn the truth about the practice of scalping from pp. 295-6.

Marek indicates that the tragedy of the invasion of 'Indian' territory by the Whites began in earnest with the California gold rush of 1849. "The deeds and misdeeds of those years have undergone a romantic transfiguration", in the author's words, "they have become legendary. Later it was said that they showed the American character at its best and at its worst. The groups that suffered the most during that time were the Indians.

The aboriginals were driven back step by step. When they defended themselves with their few poor weapons, when in their hunger they attacked wagon trains or plundered ranches, frightful reprisal campaigns were waged against them. Early in the [1860s] panic swept the country east of Sacramento

when Indians, probably Yahi, killed five white children. But in the years 1862-67 the whites had killed between 3,000 and 4,000 Indians. One detail alone suggests the senseless cruelty of the times: *the whites introduced scalping*, which was unknown to the Californian tribes”.

Thomas T. Waterman relates: “On good authority I can report the case of an old prospector-pioneer-miner-trapper of this region, who had on his bed even in recent years a blanket lined with Indian scalps. These had been taken years before. He had never been a government scout, soldier, or officer of the law. The Indians he had killed purely on his own account. No reckoning was at any time demanded of him”.

An American ‘Indian’ is of course only by idiotic convention so called. Columbus thought he had landed in India, so he called the inhabitants ‘Red’ to distinguish them from the ‘Brown’ or ‘Black’ Indians he was expecting. ‘Indian’ denotes a citizen of India, of whatever colour, race, or religion, but there is absolutely no connection between the racial types native to the Indian sub-continent and the American continent.

TO SCAN A PAGE IS TO GLANCE THROUGH IT PERFUNCTORILY

Nowadays we often hear of someone who had not enough time to read a book properly: he confesses that he merely *scanned* it. To the extent that it is a widespread meaning, it must be correct, for the English language recognises no academy or official dictionary (despite the high status generally accorded to the *Oxford English Dictionary*). But if one remembers that a gunner *scans* the horizon for any sign of the enemy even now, then we must recall the original meaning, which was to scrutinise carefully, to examine point by point, to look at all parts intently.

SCHÜSSLER AND THE TWELVE TISSUE CELL-SALTS

The German surgeon Wilhelm Heinrich Schüssler taught a variant of homeopathy called biochemistry, not of course to be confused with the modern scientific study of the chemistry of living beings. According to Schüssler, twelve salts are the basic constituents of the human body, and he devised a ‘tissue salt therapy’ to set right disorders of the body allegedly arising

from a deficiency of these salts. They were to be taken in minute doses. Subsequent homeopaths have raised Schüssler's 12 'salts' to between thirty and forty, but are equally mistaken. A description of Schüssler's fallacious doctrine can be found in his *Biochemic treatment by the twelve tissue cell-salts* (Guildford, 1892).

I have also examined the 20-page pamphlet by Schüssler entitled *The cure of diphtheria by biochemic treatment* (London, 1881). "Having cured speedily thousands of cases of diphtheria", writes Schüssler, "I am encouraged to publish this treatise, particularly so, as the number of fatal cases in my practice is almost nominal". And the method? "I give potassium chloride internally in molecular form every two hours, each dose of powder the size of a pea. If the disease can be taken at the commencement, give ferric phosphate. If the diphtheria bears a putrid character, give potassium phosphate. If the countenance of the patient has become pale and puffy, give sodium chloride".

In fact, treatment involves the use of diphtheria antitoxin in appropriate amounts at the earliest possible stage. Preventative measures are the giving of toxoid antitoxin or purified toxoid alum phosphate precipitated, of which two injections at four weeks' interval are given after the third month of age, and booster doses at five and ten years.

Despite the sarcasm of George Bernard Shaw, immunisation has achieved dramatically improved results in the treatment of diphtheria in the 20th century.

THE SCIENTIFIC METHOD IS APPLICABLE ONLY BY SCIENTISTS

We all need to apply the scientific method every day in at least one way or another. The fact is, however, that "it is at least as rare to come across a scientist who consistently applies the true scientific method as it is to find a writer with an impeccably lucid prose style", as C. H. Waddington writes in *Tools for thought* (London, 1977).

John R. Platt, in *The step to man* (New York, 1966), has even gone so far as to suggest that 'the scientific method' is found so rarely that one should rename the true 'scientific method', calling it 'the method of strong inference'. The method was developed during the Renaissance (to confine ourselves to Europe, though it was familiar in China much

earlier), and is classically described in Francis Bacon's *Novum organon* (1620).

The method involves making a series of hypotheses as to how things may be working, and then to design an experiment which will show whether these hypotheses are false.

John R. Platt describes the procedure in more detail, and although he refers solely to problems in science, notes that one can reverse the definition so that science may be defined as all those problems which this method is capable of solving. This is what he writes: "Strong inference consists of applying the following steps to a problem in science, formally and explicitly and regularly: (1) devising alternative hypotheses; (2) devising a crucial experiment (or several of them) with alternative possible outcomes, each of which will, as nearly as possible, exclude one or more of the hypotheses; (3) carrying out the experiment so as to get a clean result; and recycling the procedure, making subhypotheses or sequential hypotheses to define the possibilities that remain; and so on".

Francis Bacon stated that the scientific method "must analyse nature by proper rejection and exclusions; and then, after a sufficient number of negatives, come to a conclusion on the affirmative instances", and to put his view into historical perspective it is important to remember that the deductions being made in Bacon's period were from Pliny, Aristotle, and the Bible, for example, empirical and rational science having scarcely begun. "The first necessity under such circumstances", writes Waddington, "was indeed to debunk the unfounded myths which formed the greater part of accepted wisdom about the nature of the subjects which science had to investigate. Emphasis on rejections and exclusions of the conventional wisdom of the dominant group was very right and proper".

SEALING-WAX IS MADE OF WAX

At one time, it is true, sealing-wax was made with beeswax. However, beeswax was replaced centuries ago by a harder, more durable compound of rosin, shellac, and turpentine. The sealing-wax you buy today has no wax in it at all.

PREDICT YOUR BABY'S SEX WITH CERTAINTY

David M. Rorvik and Landrum B. Shettles are the authors of *Your baby's sex: now you can choose* (New York, 1970).

The pretensions of their book are dismissed by W. K. Beatty in the New York *Library Journal* as follows:

"One wonders why [this] report was not made in the scientific literature doctors would be more likely to see. . . The authors, while claiming 80-85 per cent effectiveness for this method [of sex selection] in some places in the text, elsewhere imply 100 per cent effectiveness. They also suggest that this technique will be common practice very soon. The case reports cited throughout show many immature and emotional judgments. The tone is that of a Sunday supplement article, and few libraries need this title". See also A MAN HAS BEEN CLONED.

IT IS EASIER TO USE A SEXDECIMAL SYSTEM OF RECKONING

If asked for their opinion (for most people it is a subjective matter), the majority of mankind would claim that their own traditional system of reckoning was the easiest to use, simply because they were accustomed to it and resisted change.

Objectively, however, it seems agreed that the easiest to use is the decimal, especially for complex calculations. There are numerous alternatives, from the British imperial system of weights and measures, to the *Calcolo decidozzinale* of Baron Silvio Ferrari (Turin, 1854), which is more easily divisible. But nobody, surely, has come up with a more curious fallacy than that of J. W. Mystrom, who offered as the easiest system of reckoning a *Project of a new system of arithmetic, weight, measure, and coins, proposed to be called the tonal system, with sixteen to the base* (Philadelphia, 1862).

Mystrom — an engineer — asked his adherents to take sixteen in place of ten and to be written 10. The numbers from zero to sixteen are renamed by Mystrom as follows: noll, an, de, ti, go, su, by, ra, me, ni, ko, hu, vy, la, po, fy, and ton. Seventeen would be tonan, and so forth.

Months would also be divided into sixteen: January (obviously not identical with the new first month) loses its initial letter to follow the cardinal number sequence above, but if logicality is the aim, there is no sign of it in the rest of the names: Anuary, Debrian, Timander, Gostus, Suvenary, Bylian, Ratamber, Mesudius, Nictoary, Kolumbian, Husamber, Vyctorius, Lamboary, Polian, Fylander, and Tonborius. Do you remember the old song, *Autumn Leaves*? "For it's a

long, long time, from the second part of Bylian and the first part of Ratamber to the latter period in Fylander and the whole of Tonborius, and the days grow shorter, as you reach the end of Kolumbian and the beginning of Husamber. . .”

SEXUAL ATTRACTION IS CAUSED BY GRAVITY

A widely-distributed broadsheet distributed by Gulam Rasul of Sahiwal, Pakistan, and bearing the rubber-stamped message “Give me the old time Religious Pamphlets”, offers several fallacies in a small area. Family planning is the chief pursuit of Mr Rasul, whose HINTS begin:

1. Why there is a sex attraction between a male and a female; should there have been none what could have happened since God knew to create from clot/clay. (Vibrations of speaker due to distance between magnet and disc.)
2. Sex attraction is a gravity attraction. To go against gravity like a rocket (for mysticism-sublimation) requires sound sex valves not punctured. (Sexual power = Force = Pressure/Puncture = Waste of energy = Loss of work) [My copy has the rubber-stamped addendum (Leads to corruption).]

Further ‘hints’ from Sahiwal include; “Students do curse the examiners; After success these students when act examiners are being cursed by other students. OR, Leave the poor to die. They are breeding like mosquitoes and flies. Poverty is the punishment for disobeying the contents of Quran in Surat Al-Nur, para. 33; which reads ‘Those can’t afford to get married should stay decently and wait until they earn sufficient wealth by God’s grace for this option’ ”.

Source: Broadsheet received from author, January 1980.

WILLIAM SHAKESPEARE USED A VOCABULARY MUCH GREATER THAN THAT USEABLE TODAY

Quite the contrary. The English language has grown enormously since Elizabethan times. Webster’s unabridged dictionary of 1934 listed over 600,000 words, while the 3rd ed. of 1961 cut the ‘unabridged’ [sic] to a mere 450,000. It is reckoned that more than a million words in present-day English have not yet become obsolete, whereas, according to Irving J. Lee (in *Language habits in human affairs*, New York, 1941), Shakespeare used fewer “than twenty thousand

different words in his plays". The average vocabulary of the contemporary English-speaker is certainly lower than that of Shakespeare, but writers and others of high literacy can make use of a lexicon far in excess of that useable by our greatest playwright.

**THERE IS A GEOGRAPHICAL LOCATION,
SHAMBHALA, IN CENTRAL ASIA, WHERE THE
SAGES LIVE**

It is the contention of Andrew Tomas in *Shambhala: oasis of light* (London, 1977) that there is an actual land known as Shambhala, though he is never precise as to the location, despite a map which shows Siberia in the north-west, India in the south-west, and China in the East. Tantalising allusions are made to the Gobi Desert and Tibetan Lamaism, but the real clue to the point of the book's departure is given on p.10: "Hardly anything had been known about Shambhala in the West before H. P. Blavatsky who presented the Ancient Wisdom of the East to an unprepared European and American public in the Victorian era". For Madame Blavatsky, see vol. 1, pp. 257-8.

Tomas connects the kingdom of Shambhala with European legends of Prester John (q.v.) and the Holy Grail, and asserts (p.23) that the "fabled Mahatmas of the Himalayas are not isolated initiates but members of a brotherhood dedicated to the spiritual resurrection of mankind. This has been common knowledge to the people of India and Tibet, at least". But if it has been common knowledge, why have there been no geographical, archaeological or other scientific expeditions to Shambhala? Why has it not been claimed by any temporal power? Tomas quotes with approval statements such as this, from the Russian Prjevalski, the great explorer and discoverer of the wild camel and of Prjevalski's Horse: "Another very, very interesting tale concerns Shambhaling — an island lying far away in the northern sea. Gold abounds in it, corn grows to an enormous height there. Poverty is unknown in that country; in fact Shambhaling flows with milk and honey" (*Mongolia*, London, 1876). Clearly, Prjevalski here relates a legend, and realises it. Sir Percy Sykes, in his *History of exploration* (London, 1949), pays tribute to the Russian's pioneering travels, and mentions his exploration of Kuen Lun, between Khotan on the north and Ladakh on the south.

Tomas clearly believes that an actual country called Shambhala is to be found in the Kuen Lun mountains, and adduces as proof a pictorial banner, showing an idealized abode of the gods within two snow-capped mountain chains.

Nobody believes in the physical existence of Sir Thomas More's Utopia, of the Teutonic hall of the gods known as Valhalla, of the 'Shangri-La' invented by James Hilton. What, then, is the appeal of making a legendary Eastern abode of the gods into actuality? Can it be that the attractions of monotheism have been eroded over the centuries since the last such religion, Islam, arose? The combination of Hindu polytheism and a numinous occultism seems to be irresistible — especially if one can relate other faiths, as Tomas' blurb-writers can: "Have Jesus Christ, Gautama the Buddha and other great reformers been sent from this lost oasis as messiahs bringing a higher state of consciousness to our world?"

What do *you* think?

ARTHUR SHUTTLEWOOD, OR THE AENSTRIANS HIT WILTSHIRE

A reporter on *The Warminster Journal*, Mr Arthur Shuttlewood, has claimed in numerous articles and at least three books that he has (1) seen many unidentified flying objects that he infers come from outer space; (2) spoken on the telephone to these visitors from outer space, or others, from the hitherto unknown planet Aenstria; and (3) met the same visitors on the doorstep of his own home, and others elsewhere, in the open.

The first book, *The Warminster mystery* (London, 1967), was published by Neville Spearman, a firm which has consistently specialised in ufology and the paranormal. The UFO sightings reported are remarkably similar to those reported elsewhere in the world, and particularly in the U.S.A., where the interest in flying Venusians has reached the proportions of the earlier tulipomania in which Western Europe indulged. An interesting appendix introduces the reader to his first actual Aenstrians. Mr Shuttlewood writes (p.187): "Although, as a realist, I still maintain that the mystery phone calls reaching me at my home in September and October were hoaxes — and therefore in somewhat dubious taste — I

will concede that there was much common sense in their content . . .

The callers from the planet (or cantel) Aenstria — Caellsan, Selorik, and Traellison — always gave the number of the Boreham Field telephone kiosk they used, east of the town centre. Yet never once, during over a dozen calls, did I hear the jangling sound of the required four pennies dropping, nor their release by pressure on a button”.

Traellison is Queen of Aenstria, a planet not of our solar system, so it is something of a privilege for the sleepy little town of Warminster to receive her at Boreham Field telephone kiosk. A privilege too for the local pubs, hotels, and journalists. How did the mysterious strangers from a different planetary system communicate with Arthur Shuttlewood? They spoke English. How did they learn it, having only just arrived? According to Mr. Shuttlewood: “Sounds, even whispers, can be enlarged by amplification. Such instruments, delicately attuned, were in use when Aenstrians journeyed near Earth many centuries ago. Frequency and wavelength patterns are always present everywhere. One merely brings into audible range something which already exists in the atmosphere”.

Arthur Shuttlewood’s second book, not published by Neville Spearman: *Warnings from flying friends* (Warminster, 1968), contains such chapter-headings as ‘Flying Crosses and Excaliburs Nothing New!’ and ‘Young Drug-Takers Groped and Grovelled’. The author breaks out into aspiring, uncontrollably vague verse on several pages, and there are two plans of ‘location-lines’ allegedly forming part of an ancient grid system connected with the white horses cut into the chalk. It seems to escape the author that white horses are necessarily located on hills made of chalk. Photographs show blobs of light and dark with very little in common, yet all the ‘UFOs’ are believed to have a common origin and a common purpose. This purpose, according to Mr. Shuttlewood at least, is friendly and consists of generalized warnings on mankind (don’t take drugs) and planet Earth (don’t contaminate it) which might emerge from a laudable if woolly-headed conservation pressure group. In this book, for the first time, Mr Shuttlewood comes face to face with the beings telephoning from outer space through the Boreham Field kiosk at Warminster. A fourth visitor who arrived on his doorstep is

about 6' 2" tall, eyes hidden by thick spectacles with silvery rims. Could it have been someone whom Mr Shuttlewood might possibly have recognised without the thick spectacle lenses? No, it was Karne, from Aenstria! "Karne wore an ordinary gaberdine mackintosh", writes Mr Shuttlewood in breathless awe, "beige in colour. His brown boots — I initially thought them shoes until he eventually walked away — were about size ten. A muffler or silk neckerchief was wrapped close to his suit collar, about which there was nothing distinctive". I don't know about you, folks, but it was the last clue that really gave away his extra-terrestrial origin.

UFOs—key to the new age (London, 1971) was published by a vanity press, and borders on the paranoiac. Other extra-terrestrial visitors were by now queueing up to take Mr Shuttlewood for a ride in their mysterious terrestrial motor-cars. Micah and Joab called on him one night in 1969, the former tall and slender with long, flaxen hair, and the latter thickset and dark. They offered more advice against polluting the Earth and its atmosphere, gave good tidings of a splendid new age round the corner when Earth is to be colonised by friendlies from elsewhere in the universe, and generally advised Mr Shuttlewood that a Third World War would not be a Good Thing.

Will the real visitors from outer space please come forward?

SIRIUS SENT AMPHIBIANS TO EARTH

In *The Sirius mystery* (London, 1976), Robert Temple sets out to show that intelligent creatures, whom he believes to have been amphibious, set out during Earth's prehistory from the region of the star Sirius, and around 3,400 B.C. taught the ancient Egyptians skills that were later transmitted to the Dogon tribe inhabiting present-day Mali.

In a well-written, intelligently argued work of nearly three hundred pages, Robert Temple tries to relate the myths and legends told nowadays among the Dogon (according to two French anthropologists on whose work he relies) to myths surviving from ancient Sumer and Egypt. He believes that the teachings have been kept esoteric deliberately, first among the priestly caste of ancient Egypt, and now among the priestly caste of the Dogon. The flaws in Mr Temple's complex hypothesis are too significant, however, for the case to be

accepted. Among the many problems which are either glossed over or not mentioned are the following:

1. The temperature of Sirius B is 8,000°C (according to Mr Temple) or 9,000°-10,000°C (according to the *Larousse Encyclopedia of Astronomy*), so that no form of life can exist there.
2. There was no known method for the interstellar transportation of sentient beings in 3400 B.C., neither has there been found direct evidence for the existence of such means of transportation.
3. There is no known method by which beings from another star or planet can communicate on a sufficiently sophisticated plane for any aspect of technics to be absorbed by the less advanced.
4. The anthropologists Griaule and Dieterlen who investigated the Dogon myth have never at any time made any claim that the Dogon might have had contact, direct or indirect, with extra-terrestrial beings. They learnt what they know of Dogon esoteric beliefs from informants who may have been unwilling to reveal all they knew, or — if willing — may have been unable to communicate their thoughts from their native languages (Sanga and Wazouba) to the French-speaking anthropologists. The scholars may have been misled intentionally by their mentors.
5. It is not clear *why* beings as advanced as is claimed by Mr Temple should attempt to teach, colonise, or otherwise contact beings as inferior to them (again in Mr Temple's view) as those dwelling in the Tigris-Euphrates and Nile deltas.
6. The divine being Nommo of whom the Dogon are alleged to speak is said by them to be crucified on a tree, to be resurrected thereafter, and to form a eucharistic meal. Is it not then more intrinsically likely that they have transformed a Christian missionary's teaching to their own cosmological notions?
7. A tragic flaw in Mr Temple's book is his misunderstanding of the universality of myth. Because a flood-and-ark story is told in Polynesia, and in Turkey, and in West Africa, there is no need to postulate that the myth was actually carried from one culture-area to another. It may have sprung up autonomously. Mr Temple's selective use of myth does no good to his case, for other myths can be

adduced to 'prove' the opposite case. Thus, he shows that the ancient Babylonians and Egyptians spoke of beings coming down from the heavens. This is true, and has been much cited by popular writers and journalists in recent years. It is, however, equally true that a different Babylonian myth describes an eagle as flying up to heaven, and a different Egyptian myth of the nearness of heaven is illustrated by the custom of placing bronze ladders in royal tombs to permit kings more easily to ascend to heaven. The presence of the ladders can be interpreted literally, in which case the Egyptians thought that heaven/sky/the upper air were after all rather close to Earth; or it can be interpreted symbolically, in which case there is no need to assume literal 'heavens' or literal 'visitors from outer space'.

So far is Mr Temple from proving his case, that it seems totally impossible for it to be feasible. The gaps in the historical and scientific thread are matched only by a lack of imagination to envisage the difficulties in the execution of the alleged events he describes.

There is a serious allegation made against the integrity of the academic establishment in Appendix 1 of *The Sirius mystery*. "No one dares to discuss what Proclus really stood for and what he represents beyond his own specific ideas". Mr Temple views Proclus (410-485) as a key figure in neo-Platonic thought, and sees the shortage of texts and translations of Proclus in print as a deliberate policy of suppression by the community of scholarship and publishing. This is not only nonsense — it is arrogant nonsense and cannot possibly be upheld by anyone familiar with the vast international network of scholars, publishers, and foundations. In these days of worldwide mass media, and grants for research into virtually every known field of activity, it is impossible to repeat worldwide the conspiracies of silence common enough among certain pressure groups at certain periods.

Mr Temple's summary of what little Proclus he has read through no fault of his own, (he cogently argues, since Proclus is one of the many ancient authors whose books are now scarce or unfashionable) is a valuable contribution towards a revaluation of the fifth-century philosopher in our day, and he is undoubtedly correct in claiming that Proclus deserves more attention than he has hitherto received.

It is important to refute *The Sirius mystery* quickly and effectively before its unproven theories enter the folklore of modern man. There is a sign of this happening, already, for pages 1-185 of Robert Anton Wilson's best-selling *Cosmic trigger* (New York, 1977) are headed 'The Sirius Connection', just as if the alleged connection had already been proved!

Why should we be worried about the proliferation of such brilliant, baseless errors as Robert Temple's *Sirius mystery* or Lysenkoism? Possibly Nietzsche formulated a part of the reason in his *Human, all too human*: "It is the mark of a higher culture to value the little, unpretentious truths which have been discovered by means of rigorous method more highly than the advantageous and dazzling errors which arise in metaphysical and artistic ages and men". The spread of universal education must eventually lead to a higher literacy, and from there to — one would hope — a higher culture, where fallacies, superstitions and irrational beliefs are, after due consideration, rejected.

But the signs are not altogether bright. As long ago as 1938, George Bernard Shaw was writing in the preface to his *Prefaces*: "The contrast between the wisdom of our literature and the folly of our rulers and voters is a melancholy proof that people get nothing out of books except what they bring to them, and that even when the books explode their prejudices and rebuke their villainies they will read their own dispositions into the books in spite of the authors, and hang up their instruments of torture and their bullet-riddled banners in the very temples of Mercy and Peace".

'SIRLOIN' WAS ORIGINALLY SO CALLED BY KING JAMES I

In a 1978 television programme, the owner of a certain British stately home claimed proudly that it was in his home that James I had jokingly dubbed an excellent helping of beef 'Sir Loin'.

Actually 'surloin' (the preferred, though less common spelling) comes from the fourteenth-century French word *surlonge* (the upper part of a loin of beef), and it occurs as 'surloyn' as early as the reign of Henry VI in the accounts of the Ironmongers' Company.

Sources include: W. W. Skeat, *An etymological dictionary of the English language* (Oxford, 1888).

SNAKE FALLACIES

Dr. Heitor Coutinho writes from São Paulo to complain that only one snake fallacy appeared in volume 1. He contributes many more, a selection of which appear below, with grateful acknowledgements:

1. Snakes deliberately commit suicide. This fallacy derives from the observation that occasionally a captured snake will bite itself in the heart when stuffed by a collector into a bag. But no snake has proved to have taken its own life intentionally.
2. Venomous snakes will die if they swallow their own venom. They will not. Their poison is aimed at securing prey, not mainly at killing enemies.
3. The American puff adder is venomous. It is not, unlike the dreaded African puff adder. The American puff adder has to use its puff to frighten enemies and hypnotise prey.
4. Cobras can be 'charmed' by a snake-charmer. Snakes sense vibrations on the ground rather than 'hear' as human beings can hear, for they have no ears. It may look as though the cobra is being charmed by a flute's sound, but in fact the cobra is merely swaying in tune with the flute to get into a striking position! The charmer has sufficient skill to keep out of striking distance, or he never lives to see another day.
5. Snakes swallow their young to protect them from danger. This fallacy derives from false deduction; if one observes a large snake swallowing a smaller snake, it is because the larger snake is exceptionally hungry, and will cannibalise its own kind rather than starve.
6. St. Patrick drove the snakes out of Ireland. There are quite a number of islands without snakes, but one does not have to allocate a saint to each in order to account for that fact!
7. Rattlesnakes always rattle before they strike. No: Dr A.I. Ortenburger of the University of Oklahoma studied this habit among Arizona rattlesnakes, and found that only 4% of those he collected did in fact rattle before they struck.
8. Rattlesnakes lay eggs. They do not — indeed, many snakes do not lay eggs.
9. Rattlesnakes add one rattle each year, so their age can be determined by counting their rattles. You're mixing them

up with rings on a tree. A rattle is added each time the snake sheds its skin, but the frequency of shedding skin depends not on the calendar but on the amount of food it eats. It may shed its skin less frequently than annually, or four or five times in a year: the average is two or three times. But even if you know how well the snake has eaten, you might still guess wrongly, because rattles frequently break off.

10. Snakes coil round a tree. Painters and cartoonists often depict this scene, but it is entirely fallacious. A snake climbs a tree with its whole body extended in a straight line, gripping the trunk or branch with its expanded ribs and clinging with the concave rows of pointed scales as it presses against the bark. At rest, too, it clings to the upper surface of a branch, and does not coil round.
11. The blind-worm is a kind of snake. The blind-worm is a member of the lizard family without visible legs. Neither is it blind. Neither is it venomous.

THE RELIABILITY OF THE FOUNDERS OF THE SOCIETY FOR PSYCHICAL RESEARCH

Nowadays the Society for Psychical Research, though still biased towards acceptance of psychical phenomena, has built up a more sceptical approach to the thousands of 'cases' submitted to them for analysis and publicity.

It was not always so, as Trevor H. Hall has shown in *The strange case of Edmund Gurney* (London, 1964), one of the founders of the S.P.R., and honorary secretary at the time of his death. He died in mysterious circumstances in 1888, alone in the locked bedroom of a Brighton hotel. Trevor Hall, having investigated the case, comes to the conclusion that Gurney committed suicide in desperation, having discovered that most of the foundations of the S.P.R.'s early work had been fraudulent. Leading members of the S.P.R. are alleged to have 'covered up' Gurney's alleged suicide, and the verdict recorded was that of 'accidental death'. Trevor Hall finds in Gurney a sympathetic character 'brutally deceived by a conjuring impresario'.

Another founder of the S.P.R., Frank Podmore, died by

drowning — possibly another suicide; a relationship between F. W. H. Myers (another founder) and Mrs Anne Marshall seems to have led to the undoubted suicide of the latter in 1876.

Together, Gurney, Myers and Podmore wrote a classic of the period which has had enormous influence on later psychological research: *Phantasms of the living* (2 vols., London, 1886), abridged for a new edition in 1918. The three men were repeatedly taken in by frauds and charlatans in three principal ways: they had a desire for belief; “they seem to have been entirely ignorant of the principles of conjuring” (Trevor Hall is himself a distinguished member of the Magic Circle); and they accepted without feeling a need for proof any tale submitted by “a person of ‘unblemished character’,” by which they meant a clergyman, judge, academic, or professional man.

The actual worth of their book is nil: in the words of D. H. Rawcliffe, “not one example of contemporary written evidence is to be found in 702 stories, including 350 at first hand”. Gurney, Myers and Podmore went so far as to admit that a small number of ‘fairly conclusive cases’ was the best they could produce, and that the vast majority of their cases were ‘confirmatory only and not crucial’.

Rawcliffe observes: “Even with the best authenticated stories of the supernatural there is always a lapse of time between the original event which fired the imagination, and its commitment to paper. A purported telepathic, clairvoyant or prophetic experience must more or less correspond to some external event to render it veridical; and the only admissible evidence in such cases is an account of the experience written down, or otherwise recorded — *before* the external event takes place — in a diary, a letter or other document”. But there is not a single such example in *Phantasms of the living*. E. Parish, analysing the cases in *Hallucinations and illusions* (London, 1897, p.104), concluded that a large percentage showed unmistakable evidence of a dream state of consciousness. He showed that the great bulk of records concerning ghosts, phantoms, hauntings and apparitions are simply records of optical illusions, delusions, and dreams, including somnambulism.

Sources include: D. H. Rawcliffe, *Illusions and delusions of the supernatural and occult* (2nd ed., New York, 1959).

THERE IS PROOF THAT SOLOMON WAS VISITED BY THE QUEEN OF SHEBA

In Kings I, 10, we are told: "Now when the Queen of Sheba heard of the fame of Solomon concerning the name of the Lord, she came to test him with hard questions. She came to Jerusalem with a very great retinue, with camels bearing spices, and very much gold, and precious stones; and when she came to Solomon, she told him all that was on her mind. And Solomon answered all her questions; there was nothing hidden from the king which he did not explain to her" (*Revised Standard Version*, 1952).

Six scholars writing *Solomon and Sheba* (London 1974), led by the book's editor, James B. Pritchard, come to the conclusion that "the evidence for the historical documentation of the story — if it indeed exists — has not yet appeared", and it may well be that the 10th-century meeting is wholly fictional.

Source: James B. Pritchard (ed.), *Solomon and Sheba* (London, 1974).

SOMATOGRAPHY

Defined as the 'mapping out of the soul', somatography is described by the founder of the Company of Somatographers, Mr Bryn Jones (a Welsh businessman), as a form of healing incorporating "both hard and soft tissue massage, exercise and natural remedy".

According to *The many ways of being* (London, 1976), edited by Stephen Annett, Bryn Jones became interested in healing in the 1960, when "he received a series of visionary experiences. These instructed him in an understanding of how to heal through the subtle bodies, and this was the beginning of somatography". Mr Jones claims that "traumatic experiences from the distant past linger in our subtle bodies and obstruct our future growth". Mr Jones has introduced into his massage of auras some radionic equipment designed by the American Mark Gallot. Treatment may also consist of change of diet, exercise, natural remedies, and meditation. Somatography aims to help in the treatment and cure of mental illness, loss of vitality, and physical complaints.

Maintenance of an open mind requires that we do not rule out the possible existence of an aura of some kind; it is, however, fallacious to claim that we know what it is, what ailments it may have, or how to cure them.

THE SKILL OF THE SOPHISTS

Socrates, a mouthpiece of Plato, mocks the sophists at Athens who can make any fallacy appear true by smooth but erroneous 'reasoning'. Such sophists are at work, however, in all countries and at all times (each of us is our own sophist, and to some extent the sophist against others and a victim of others) and it is necessary to see the following translation as universally applicable.

In the *Euthydemus*, Socrates describes to Crito the astonishing sophistry of Euthydemus, and remarks: "So great is their skill that they can refute any proposition whether true or false". Dionysodorus, another sophist, attempted to prove to a certain Ctessipus, that the father of Ctessipus is a dog. The result is that what seems to have been logically proved is logically fallacious and must be re-examined carefully to discover the source of the fallacy.

Dionysodorus: You say you have a dog?

Ctessipus: Yes, a villain of a dog.

D.: And has he puppies?

C.: Yes, and they are very like him.

D.: And the dog is their father?

C.: Certainly, for I saw him mate with the mother of the puppies.

D.: But is he not yours?

C.: He certainly is.

D.: Then as he is a father, and as he is yours, therefore he is your father and the puppies are your brothers.

The fallacy in logic is here as clear as the fallacy in common sense.

SORTES PRAENESTINAE

The 'Prenestine Lots' of ancient Rome consisted of an urn containing the letters of the Latin alphabet which was turned over, after having been shaken. Any resulting words which fell on the ground were taken to be omens.

Nowadays, we call it Scrabble, and few people, if any, believe in omens from the fall of the letters. But in classical antiquity omens were regularly drawn, fallaciously, from a very wide variety of sources.

THE SOVIET ECONOMY IS SELF-SUFFICIENT

In the Union of Soviet Socialist Republics, the 'world's free press is almost impossible to find and read. Thus, *Pravda* could tell its Soviet readers on 4 October 1979 that the "Soviet economy is capable of providing the country with everything necessary".

This is fallacious: no country in the world is self-sufficient in everything. The proof is that American newspapers on the same day carried reports that the U.S.A. allowed the U.S.S.R. to make the largest grain purchase in history: up to 25 million metric tons of wheat and corn during the following year, that is roughly 10% of U.S.A. domestic production. The largest previous sale — 18 million metric tons — was made in 1972.

MAN HAS CONQUERED SPACE

Man has of course invented and utilised spacecraft, and begins to know more and more of the solar system. But, as Arthur C. Clarke states ('We'll never conquer space', in *Edge of awareness*, ed. by Ned E. Hoopes and Richard Peck (New York, 1966), "We have abolished space here on the little earth; we can never abolish the space that yawns between the stars". One of the difficulties is that messages (still less any material object) can never travel faster than light. Messages can thus take as short a time as twenty minutes between Earth, Mars, and Venus, but even if our spacecraft can be propelled at near enough the velocity of light, it will still take five years to get from Earth to the nearest star, or more than twenty-six years to the brightest star of the northern skies, Vega of the Lyre.

But the number of other suns in our own galaxy is about 10^{11} , or 100,000,000,000, and the relatively poor telescopes that we possess at the present can observe a further 10^9 other galaxies. Moreover, the number of galaxies does not seem to diminish at the extreme limit of observation. Thus we can be sure that, no matter how ingenious man becomes at constructing space vehicles and at powering them, he will never be able to reach the outermost limits of space to the point where it can be truly be said to have been 'conquered'.

IN ENGLISH SPELLING, 'I' COMES BEFORE 'E', EXCEPT AFTER 'C'

Generation after generation of schoolchildren have been

taught the above spelling rule, which works with ‘field’ and ‘ceiling’ perfectly well, but it is not a valid *rule*. ‘Seize’ and ‘leisure’ are only two of the many examples which test the ‘rule’ and find it so wanting that it had better be forgotten completely. Now.

‘SPINET’ DERIVES ITS NAME FROM THE ITALIAN ‘SPINA’, A THORN

As late as his second edition of 1945, Karl Geiringer could write in *Musical instruments* (London, 1945) that the plucked keyboard instrument called spinet or virginal derived its English name from the Latin and Italian word *spina* (thorn) through *spinetta* (little thorn).

But A. J. Hipkins, in the third edition of Grove’s *Dictionary of music and musicians* (5 vols., 1927), had already reported that Ponsicchi, in *Il pianoforte* (Florence, 1876) quoted Adriano Banchieri’s tale, in *Conclusioni nel suono dell’organo* (Bologna, 1608): “The spinet received its name from the inventor of that oblong or tabular form called Giovanni Spinetti, a Venetian. I have seen one such instrument in the hands of Francesco Stivori, organist at Montagnana, bearing the following inscription: JOANNES SPINETUS VENETUS FECIT. A.D. 1503”. [Translation by Ph.W.]

Spinetti was therefore not the inventor of anything but the physical form in which the Italian form of the virginal was constructed, but it is his name which survives.

SPIRIT-RAPPING

The great showman Phineas T. Barnum knew a great deal more about conjuring and trickery than most of us put together. *The humbugs of the world* (London, 1866) is one of the most entertaining books written in Victorian times, and Barnum deals at hilarious length with the ‘spirit-rappers’ in a manner that has never been superseded although, alas!, the spirit-rappers are still with us, as indeed are those who believe spiritualist claims made for the other-worldly origin of the phenomena.

Let Phineas Barnum take over:

The “spirit-rapping” humbug was started Hydesville, New York, about seventeen years ago [on 31 March 1848. *Ph. W.*], by several daughters of a Mr. Fox, living in that

place. These girls discovered that certain exercises of their anatomy would produce mysterious sounds — mysterious to those who heard them, simply because the means of their production were not apparent. Reports of this wonder soon went abroad, and the Fox family were daily visited by people from different sections of the country — all having a greed for the marvellous. Not long after the strange sounds were first heard, someone suggested that they were, perhaps, produced by spirits; and a request was made for a certain number of raps, if that suggestion was correct. The specified number were immediately heard. A plan was then proposed by means of which communications might be received from “the spirits.” An investigator would repeat the alphabet, writing down whatever letters were designated by the “raps.” Sentences were thus formed — the orthography, however, being decidedly bad.

What purported to be the spirit of a murdered pedlar gave an account of his “taking off.” He said that his body was buried beneath the very house, in a corner of the cellar; that he had been killed by a former occupant of the premises. A pedlar really had disappeared somewhat mysteriously from that part of the country some time before; and ready credence was given the statements thus spelled out through the “raps.” Digging to the depth of eight feet in the cellar did not disclose any “dead corpus,” or even the remains of one. Soon after that, the missing pedlar re-appeared in Hydesville, still “clothed with mortality,” and having a new assortment of wares to sell.

That the “raps” were produced by disembodied spirits many firmly believed. False communications were attributed to evil spirits. The answers to questions were as often wrong as right; and only right when the answer could be easily guessed, or inferred from the nature of the question itself.

The Fox family moved to Rochester, New York, soon after the rapping-humbug was started; and it was there that their first public effort was made. A committee was appointed to investigate the matter, most of whom reported adversely to the claims of the “mediums;” though all of them were puzzled to know how the thing was done. In Buffalo, where the Foxes subsequently let their spirits flow, a committee of doctors reported that these loosely

constructed girls produced the "raps" by snapping their toe and knee-joints. That theory, though very much ridiculed by the spiritualists then and since, was correct, as further developments proved . . .

The Fox family found that the rapping business would be made to pay; and so they continued it, with varying success, for a number of years, making New York city their place of residence and principal field of operation. I believe that none of them are now in the "spiritual line." Margaret Fox, the youngest of the rappers, has for some time been a member of the Roman Catholic Church.

From the very commencement of spiritualism, there has been a constantly increasing demand for "spiritual" wonders, to meet which numerous "mediums" have been "developed".

Many, who otherwise would not be in the least distinguished, have become "mediums" in order to obtain notoriety, if nothing more . . .

There is a person by the name of J. V. Mansfield, who has been called by spiritualists the "Great Spirit-Postmaster," his specialty being the answering of sealed letters addressed to spirits. The letters are returned — some of them at least — to the writers without appearing to have been opened, accompanied by answers purporting to be written through Mansfield by the spirits addressed. Such of these letters as are sealed with gum-arabic merely, can be steamed open, and the envelopes resealed and reglazed as they were before. If sealing-wax has been used, a sharp thin blade will enable the medium to nicely cut off the seal by splitting the paper under it; and then after a knowledge of the contents of the letter is arrived at, the seal can be replaced in its original position, and made fast with gum-arabic. Not more than one out of a hundred would be likely to observe that the seal had ever been tampered with. The investigator opens the envelope, when returned to him, at the end, preserving the sealed part intact, in order to show his friends that the letter was answered without being opened! . . .

Time and again has Mansfield been convicted of imposture, yet he still prosecutes his nefarious business. The "Spirit-Postmaster" fails to get answers to questions as these: "Where did you die?" "When?" "Who attended

you in your last illness?" "What were your last words?" "How many were present at your death?"

But, if the questions are of such a nature as the following, answers are generally obtained: "Are you happy?" "Are you often near me?" "And can you influence me?" "Have you changed your religious notions since entering the spirit-world?"

It is to be observed that the questions which the "Spirit-Postmaster" can answer *require no knowledge of facts about the applicant*, while those which he cannot answer do require it.

Address, for instance, your spirit-father without mentioning his name, and the name will not be given in connexion with the reply purporting to come from him — unless the medium knows your family.

I will write a series of questions addressed to one of my spirit-friends, enclose them in an envelope, and if Mr. Mansfield or any other professed medium will answer those questions pertinently in my presence, and without touching the envelope, I will give to such party five hundred dollars, and think I have got the worth of my money".

CATTLE CHOOSE TO LIE NEAR A SITE OF STANDING STONES

Dr Lyall Watson, a qualified biologist, has recently moved into a kind of mystical pantheism which has been rejected even by convinced psychics such as Stan Gooch. Dr Watson's *The omnivorous ape*, *Supernature* (London, 1973), *The Romeo error* (London, 1974) and *Gifts of unknown things* (London, 1976) are the evidence for this view. In the last book, for instance (p.109), we are told that: "Cattle in a field choose to lie down in one particular area despite the fact that it many times offers no apparent advantage in the form of food, shade or shelter. They may well be responding to stimuli too subtle for us to appreciate, but it is also possible that we could be underestimating our own sensory capacity. Very often the cattle congregate in that part of a field already selected at some earlier time by man for the erection of a standing stone or the construction of an old mound or barrow".

Let Stan Gooch voice the doubts of common sense: "How many times", he asks, "has Dr Watson observed how many

cattle congregate around some (real or alleged?) old human site? How many times has Dr Watson seen (or not seen) *other* cattle congregating, or not congregating, in parts of a field where there is no human site? Moreover, if the stone or mound is still visible, might not that object itself in some way focus the cattle's attention?"

It certainly might. In the same way that experienced water diviners respond (consciously or subconsciously) to topographical features associated with subterranean water, so men have traditionally built structures in the vicinity of water, and cattle — who need water as much as does man — prefer to stay within the vicinity of streams, springs, wells and ponds. That is not to say that this comment exhausts the depths of fallacious reasoning provided by Dr Watson in one single paragraph.

Sources include: Stan Gooch, *The paranormal* (London, 1978, pp. 65-6).

THERE WAS A STAR OF BETHLEHEM THAT STOOD STILL

This is one of the Christmas Festival superstitions frequently mistaken for facts that recur once a year, despite the statement in *The Oxford Dictionary of the Christian Church* (London, 1957), edited by F. L. Cross, that "several attempts . . . to connect the star with unusual astronomical phenomena . . . have now been generally abandoned".

Kepler, for example, calculated that there was a conjunction of the planets Jupiter and Saturn in 7 B.C. A spokesman from Jodrell Bank, speaking on B.B.C. Radio 4 on Christmas Eve 1979, offered suggestions that folk memory may have connected the 'star' with a sighting of Halley's Comet in 11 B.C. or a supernova possibly datable to 5 B.C., but as the story was first written down in a garbled form some 70 years after the event, we just don't know.

THE STARS ARE MADE OF ICE

John Finleyson or Finlayson (1770-1854) was a Scot who published far too many pamphlets with scientific claims and little sense.

Among them was *The universe as it is, and the detection and refutation of Sir Isaac Newton. Also, the exposure and*

proved fabrication of the solar system (London, 1830). Finleyson, who claimed that Earl Grey (1764-1845) was a descendant of Uriah the Hittite, also asserted that the stars were made "to amuse us in observing them" and that they are "oval-shaped immense masses of frozen water". The next time you put ice in your drink, just pause: you might be consuming part of a fallen star. See also **THE SUN IS MADE OF ICE**.

FALLACY OF INSUFFICIENT STATISTICS

Wesley Salmon's *Logic* (Englewood Cliffs, N. J., 1963) is one of the few works on logic to take account of statistical fallacies.

Salmon notes the problem of insufficient statistics: making an inductive generalization before enough data have been accumulated to warrant such a generalization. Thus, a road traffic survey undertaken *either* only during a rush-hour period *or* only during the middle of the night will give a completely false conclusion.

Salmon also warns against biased statistics: basing an inductive generalization on a sample known to be selective or believed to be selective.

IN STATISTICS, EVERY 'ONE CHANCE IN A HUNDRED' MUST OCCUR ONCE IN EVERY HUNDRED OCCASIONS

No subject except religion occasions more fallacious beliefs than statistics. If 'on average' an event occurs once in every hundred events, and the sample covers a thousand events, then that event may occur ten times in ten events, as long as no further event occurs in the other 990 events. Similarly, it may occur not at all in the first hundred, two hundred, or even nine hundred chances and yet still occur 'on average' once in a hundred events.

STEADY-STATE COSMOLOGICAL THEORIES

The theory of a steady-state cosmology started from the assumption that the universe looks the same at all times, as well as from all points in space. But since the universe is observed to be expanding, matter would be spread out in time, so that proponents of the steady-state theory are compelled to postulate that matter is in a process of continuous creation to

fill the 'space' caused by expansion. The rate of creation, calculated at one hydrogen atom per litre of volume (about one quart) every 500 billion years, is far too small to measure in the laboratory.

Fred Hoyle has proposed that created matter appeared from a C- field, a form of negative energy which he suggested must have filled the universe. This theory now seems disproved by the discovery of weak background radiation in space which must have originated in a state of the universe *completely* different from the state we recognise and analyse today.

The theory of an expanding universe seems intrinsically more likely, by Occam's Razor (q.v.), because it does not require that the hypothesis of continuous creation of matter be satisfied.

Source: Ian Ridpath (ed.), *The illustrated encyclopedia of astronomy and space* (London, 1976).

STERILITY IN MEN CAN BE CAUSED BY CLOSE-FITTING UNDERPANTS OR BY THERMAL UNDERWEAR

"Many infertile couples have been 'cured' by the advice to the man to give up tight underpants", writes J. Cohen in *Reproduction* (London, 1977).

Dr T. E. Thompson writes in refutation of this widespread fallacy: "Such advice may form part of the advice given to infertile couples during subfertility counselling. Such counselling involves many aspects of human sexuality, and it is not possible to separate later which aspects of the advice given resulted in any success obtained. Subfertility counsellors are not experimenters, nor would their patients wish to be experimented upon. At present there is no sound evidence that the style of underwear worn by a man (unless it actually induces morbidity) can influence his fertility.

The supposed scientific basis of the tale derives from laboratory studies that have established that heat produces detrimental effects on the functioning of the testis. But it is equally well established (see Cockett and Urry's *Male infertility, workup, treatment and research*, New York, 1977) that cold stress may harm the functioning of the testis. No mammalian organ system will continue to function properly if

subjected to extreme temperature stress: this is not a peculiarity of the testis.

Further experimental information has been provided by a survey of the effects of deliberately excessive exposure of a team of volunteer students of medicine to the Finnish sauna bath. Twelve subjects used the sauna eight times in two weeks, the temperature in the bath being 77-90°C, considerably above the normal body-temperature which rarely reaches 40°C. The total sperm count was studied for a period of two months after the period of exposure to the high temperature of the sauna. The only deleterious effect noted was that a negligible drop in sperm counts occurred between the 30th and 39th days after the beginning of the experiment. The truth of the matter is that the blood circulation of the body, which penetrates the testis just as it does nearly all the other organs of the mammal, is ample to smooth out local fluctuations in the temperature of individual organs. The testis is little more at risk in the sauna than is the nose or the pancreas”.

Sources include: Procopé, ‘Effect of repeated increase of body temperature on human sperm cells’. In *International Journal of Fertility*, vol. 10, 1965, pp. 333-9.

STILL WATERS RUN DEEP

The common saying is reflected in Anthony Trollope’s novel *He knew he was right* (1869, ch. 35): “That’s what I call still water. She runs deep enough . . . So quiet, but so — clever”.

But Trollope had given no more thought than any of his predecessors to the inherent fallacy: *still* waters do not run at all!

THE STOIC CLASSIFICATION OF FALLACIES

One is not to trust Sextus Empiricus (2nd-3rd century) on the Stoic classification of fallacies, for he was hostile to the Stoics (or, ‘Dialecticians’ as he calls them in his *Outlines of Pyrrhonism*, Book II), but there is no other source at all.

“Now the Dialecticians assert that an argument is inconclusive owing to inconsistency or to deficiency or to its being propounded in a bad form or to redundancy. An example of inconsistency is when the premisses are not logically coherent with each other and with the inference, as in the argument ‘If it is day, it is light; but in fact wheat is being sold in the

market; therefore Dion is walking'. And it is a case of redundancy when we find a premiss that is superfluous for the logic of the argument, as for instance 'If it is day it is light; but in fact it is day and Dion also is walking; therefore it is light'.

And it is due to the bad form in which it is propounded when the form of the argument is not conclusive; for whereas the really syllogistic arguments are, they say, such as these: 'If it is day, it is light; but in fact it is day; therefore it is light'; and 'If it is day, it is light; but it is not light; therefore it is not day' — the inconclusive argument runs thus: 'If it is day, it is light; but in fact it is light, therefore it is day'.

And the argument is faulty by deficiency, when it suffers from the omission of some factor needed for the deducing of the conclusion: thus, for instance, while we have, as they think, a valid argument in 'Wealth is either good or bad or indifferent; but it is neither bad nor indifferent; therefore it is good', the following is faulty by way of deficiency: 'Wealth is either good or bad; but it is not bad; therefore it is good'.

C. L. Hamblin, a foremost writer on logical fallacies, makes three main observations on these words of Sextus Empiricus. Firstly, the four kinds of 'inconclusiveness' are regarded as involuntary lapses of reasoning, and not as sophisticated tricks. Secondly, two of the 'inconclusive' arguments are formally valid. The second type merely possesses a superfluous premiss, while the fourth type has a valid argument but a false first premiss. Thirdly, the statement by Sextus is not an explanation of a fully-grown logical system, but a brief catalogue of some types of fallacy. The books of the major Stoic logician, Chrysippus, do not themselves survive — though we have an impressive list of them by Diogenes Laertius — except for fragments in the *Stoicorum veterum fragmenta* edited by H. F. A. von Arnim (4 vols., Stuttgart, 1903-24), vol.2, pp. 89-94.

Sources include: C. L. Hamblin, *Fallacies* (London, 1970).

STOLISOMANCY

Divination by the observation of another's mode of dressing.

The Emperor Augustus, a prey to numerous forms of superstition, was convinced that a military revolt could be predicted by the fact that one of his manservants had buckled his right sandal to his left foot.

Life is neither that simple; nor — judged from a second point of view — that complicated.

THE LAST STRAW BREAKS THE LADEN CAMEL'S BACK

Charles Dickens quoted this absurd fallacy in *Dombey and Son* (ch.2, 1848), without realising that no camel ever rose from its haunches with a burden too heavy to carry. Camels are too cautious to be overloaded, and will lie down until some of the unfair weight has been removed.

The regular load of a camel is 400 pounds, but H. E. Cross states that before World War I the natives of the Raj loaded their camels with up to 800 pounds and big camels in good condition have been known to carry 960 without excessive discomfort.

Source: H. E. Cross, *The camel and its diseases* (London, 1917).

SUCCULENTS NEED LITTLE OR NO WATER

"The old idea that cacti [and other succulents] need little or no water dies hard, but this is far from true", write Edgar and Brian Lamb in their *Pocket encyclopaedia of cacti in colour* (Poole, 1969). "Cacti may be able to go without water for a considerable period without looking too unhappy, but they enjoy a 'good drink' as much as most other plants. Even so, we find with the many growers we meet each year that there is still a general tendency to under-water rather than over-water. Another mistaken idea is that cacti should only be watered at the base, and never from above; after all, rain falls directly on and around species growing in the wild!"

Walther Haage confirms this view in his *Cacti and succulents* (London, 1963). "After all", he writes, "no plant, not even the most drought-resisting, can exist without any water for long".

EATING SUGAR LEADS TO CRIME

We are indebted for the above fallacious generalization to the 'organic' food cultist Jerome Irving Rodale, publisher of the magazines *Organic Gardening* and *Prevention* with a combined circulation, at one time, of over 1 $\frac{3}{4}$ million readers. Some of the observations in these magazines are sensible enough,

but Rodale gets out the hobby-horse and rides it to the realm of fantasy in *Natural health, sugar and the criminal mind* (New York, 1968). The book starts off with the conclusion that there is a causal connection between a high rate of sugar consumption and a tendency towards crime and even psychosis. We are interested to learn that "Hitler was a typical example of sugar addiction relating to a tendency towards crime. . . The evidence is there. There can be no question about it. Hitler must have suffered from low blood sugar due to an over-consumption of sugar". Addiction to sugar, Rodale asserts, is responsible not only for the rising crime rate in America, but also for the high suicide rate in Denmark. Well, Cuba has a rising rate of sugar consumption but a falling suicide rate. One of the fallacies here is the irrelevant analogy: one might as well say that a rising rate of sugar consumption leads to an increase in the birth-rate. The two phenomena might concur, or they might not, but they are unconnected causally in either case.

WHITE SUGAR IS LESS NUTRITIOUS THAN BROWN SUGAR

So many people believe either this theory, or its opposite, that one has little or no chance of being believed. But the truth is that both brown sugar and white sugar are refined from the same cane by the same process; white sugar is simply a different stage, after some of the colour and some of the taste have been removed from brown sugar.

THE SUN IS AN ELECTRIC SPACE

One of the more interesting fallacies, that the Sun is a space consisting of various states of electricity, may not be as commonly held as others described in the *Dictionary*. Indeed, I have so far not found anyone who agrees on the point with the advocate of this theory, one James Hopkins, 'Schoolmaster'.

His book, which appeared before a notably apathetic London public in 1849, is entitled *The solar system truly solved; demonstrating by the perfect harmony of the planets, founded on the four universal laws, the Sun to be an electric space; and a source of every natural production displayed throughout the solar system*.

Hopkins concludes "That the Sun is an *Electric Space*, fed

and governed by the planets, which have the property of attracting heat from it; and the means of supplying the necessary *pabulum* by their degenerated air driven off towards the central space — the wonderful alembic in which it becomes transmuted to the revivifying necessities of continuous action; and the central space or Sun being perfectly electric, has the counter property of repulsing the bodies that attract it”.

Hopkins would be amazed to learn (if he were alive and had the curiosity to actually find out anything for himself) that although the solar mass diminishes by 4.2 million tons per second, the present total mass is still around 2,200,000,000,000,000,000,000,000,000 tons. ‘Electric space’ in any case is a term of no real meaning.

Will the school which employed James Hopkins please own up?

THE SUN IS MADE OF ICE

In volume 1, we described the 18th-century belief, taught by no less a personage than Sir William Herschel, President of the Royal Astronomical Society, that beneath the hot surface of the sun, the temperature is cool. The Rev. P. H. Francis, writing in the 20th century, believed the sun to be temperate.

However, to complete our collection of fallacious notions concerning the sun, it is necessary to turn to Charles Palmer, whose work was published in London in 1798.

The author of *A treatise on the sublime science of heliography, satisfactorily demonstrating our great orb of light, the sun, to be absolutely no other than a body of ice! Overturning all the received systems of the universe hitherto extant; proving the celebrated and indefatigable Sir Isaac Newton, in his theory of the solar system, to be as far distant from the truth, as many of the heathen authors of Greece and Rome claimed to burn some tobacco with a lens of ice as easily as with a burning glass, and consequently stated: “If we admit that the sun could be removed, and a terrestrial body of ice in its stead, it would produce the same effect. The sun is a crystalline body receiving the radiance of God, and operates on this earth in a similar manner as the light of the sun does when applied to a convex mirror or glass”.*

The chain of *non sequiturs* is so breathtaking that it defies analysis. See also **THE STARS ARE MADE OF ICE**.

ONE SWALLOW DOESN'T MAKE A SUMMER

But it never did. The story in Aesop's fable 'The spendthrift and the swallow' concerns a young prodigal, who sold his winter cloak, on seeing a swallow emerge from its hiding-place during a warm spell, and spent the proceeds on riotous living. But the wintry frost returned, and he learned to his sorrow that 'one swallow does not make a spring'. In his *Nicomachean Ethics* (I, ch. 7, sec. 16), Aristotle repeated the saying, which had by then become a proverb (*mía gâr chelidôn éar ou poiei, oudè mía heméra*, in Aristotle: 'neither one swallow nor one fine day makes spring'). Erasmus translates the season faithfully *Una hirundo non facit ver* in *Adagia*, Chil. i, cent. vii, no. 93, but Taverner, in his *Translations from Erasmus*, renders the proverb 'It is not one swalowe that bryngeth in somer', while John Ray shows the original surviving in *English proverbs* (1678): 'One swallow makes not a spring, nor one woodcock a winter'.

The French say *Une hirondelle ne fait pas le printemps* and the Italians *Una rondine non fa primavera* (for spring), while the Spanish say *Una golondrina sola no hace verano* and the Germans *Eine Schwalbe macht keinen Sommer* (for summer), so clearly the place is immaterial, since spring and summer arrive at roughly the same time in Italy and Spain, and in France and Germany.

However, Christina Rossetti had not learnt *anybody's* lesson as recently as 1865. In the second stanza of 'A Bird Song' she trills:

'It's surely summer, for there's a swallow'.

T

“Truth is as poor as Job, as barren as the desert sand, and as boring as an old second-hand-bookseller. But falsehood is as rich as the Pope in Rome! Falsehood builds up monuments that can stand for millennia and give millions of people a home where they feel happy and secure”. — HJALMAR SÖDERBERG, *Jesus Barabbas* (Stockholm, 1928)

THE ANNALS OF TACITUS ARE A FORGERY BY POGGIO BRACCIOLINI

An attempt was made in 1878 to prove that the celebrated *Annals* of Tacitus (c. 55–c. 117), “easily the best literary source for the events of the early Principate that we possess” to quote Michael Grant, was a forgery by the Florentine humanist Poggio Bracciolini (1380–1459). However, one at least of the two Medicean codices containing a half of the manuscript was known to Boccaccio, who died five years before Poggio’s birth, and the genuineness of the *Annals* is otherwise completely vindicated not only on stylistic grounds, but also by the book’s agreement in minute details with coins and inscriptions discovered since the death of Poggio.

HOW TO MAKE YOUR WIFE TALK IN HER SLEEP

The 16th-century Neapolitan prodigy Giambattista della Porta lived in a period, like the present, when the sciences were being attacked as reactionary by pseudo-scientists. Whereas the 20th-century scientist is subjected to irrational claims from those who claim experimental validity for parapsychology and flying saucers, the 16th-century seeker after truth was assailed by those claiming the reality of alchemy, prophecy, and witchcraft.

Della Porta was not a charlatan, but was taken in by alleged miracles. His field was optics, and he was easily led astray by claims for extraordinary discoveries in fields other than his own. Della Porta’s *Magiae naturalis, sive de miraculis rerum*

naturalium libri iiii (Naples, 1558) contains so many more 'miracles' than 'natural things' that one could effortlessly produce *A Dictionary of Common Fallacies* consisting solely (and uncharitably) of his own mistakes. The *Magiae naturalis* went into dozens of editions, and became one of the most widely-read books of the time. An English translation, *Natural magick* (London, 1658), shows that its attractions were not confined to southern Europe, and to those who could read Latin. "How to force a woman to babble in her sleep whatever we desire to know of her secrets" is a technique that perhaps the English language did not need to acquire. Della Porta advises the curious reader to wait until his wife is sound asleep, and then to place over her heart the tongue of a frog or of a wild duck, for these animals 'give tongue' at night! After waiting for the magic to take its effect, one asks the questions to be answered. If your wife does not answer at once, wait and repeat the questions. Ultimately, all will be revealed.

How long ago did rational men stop believing such nonsense? Dear friend, if you will open your daily newspaper at the horoscope page, or open such magazines as *Fate*, similar wonders of gullibility will be revealed. Not yesterday only — not today only — but also tomorrow, and for as long as men continue to surrender their powers of independent thought to the mass media, to advertisers, to political parties, to religious groups, and to exclusive societies of whatever nature. Della Porta was no greater a victim of his times than we are of our own. Let us beware.

THE BITE OF THE TARANTULA SPIDER CAN ONLY BE CURED BY DANCING THE TARANTELLA

A hysterical malady, tarantism, characterised by an impulse to dance, was common in Apulia (southern Italy) from the 15th to the 18th centuries. The city of Taranto was particularly connected with outbreaks of tarantism, which by folk etymology was confused with *Lycosa tarantula*, a spider found in the Taranto area. Confusion was so rife at one time that some thought that the dance was a cure for the spider's venomous bite, and others that the dance was *caused* by a bite! The tarantula spider is, however, entirely unconnected with the phenomenon of tarantism, which recurred in patients summer after summer.

Tarantula spiders still exist in the Taranto region, as does

the tarantella dance. The playwright Oliver Goldsmith (in *Animated nature*) described the hoax played on visitors by the Tarantese. For a fee paid by a credulous traveller, a peasant would be 'bitten' by a spider, simulate collapse, and then be restored to health by the music and dancing of the tarantella. The 'explanation' of the Tarantese was that the sweating caused by dancing exuded the poison of the spider's bite!

Sources include: Theodore N. Savory, *Arachnida* (2nd ed., London, 1978).

SCOTTISH TARTANS HAVE BEEN FIXED FROM TIME IMMEMORIAL

A. E. Haswell Millar has devoted nearly two pages to demolishing this error in the Historical Association's *Common errors in Scottish history* (London, 1956). The salient points are as follows:

1. The 'tartan' pattern type, far from being truly Scottish, is a simple design known to be native to many parts of the world, including Latin America and the Far East. A tartan has been identified in a fifteenth-century Sienese painting, and others appear commonly in the Japanese prints of the 18th and 19th centuries.
2. Those people bearing certain Scottish surnames claim the right to wear a given pattern as an exclusive right. But the assigning of certain patterns to certain clans in a more or less systematic manner is a phenomenon of the 19th century, and can indeed be roughly dated from 1822, when George IV visited Edinburgh and was seen in a form of Highland dress. At the same time Sir Walter Scott's novels were endowing the Scottish Highlanders with a spuriously 'romantic' past far removed from the historical truth, and the so-called Sobieski Stuarts — two brothers claiming descent from 'Bonnie Prince Charlie' — were 'transcribing' (if that is the word, the original never having been traced) a manuscript in their possession which the elder Sobieski Stuart alleged laid down all the correct clan tartans. Nothing supports this claim. On the contrary, no tartan found on the Grant portraits at Castle Grant is found repeated, and not one is close to the 'Grant' tartan known today. Other families (the Murrays, say, and the Macdonalds) fail to show consistent use of a single tartan

on family portraits as early as the 18th century.

"All the pictorial evidence suggests that the Scottish gentleman or lady regarded the patterns in their clothing in the same spirit as we select the material of our suiting today: they simply fancied a certain colour and design.

"To sum up, the presumed heraldic or 'family badge' significance of the tartan has no documentary support, and the establishment of the myth can be accounted for by a happy coincidence of the desires of the potential customer, the manufacturer and the salesman".

Sources include: M. M. Haldane, 'The Great Tartan Myth', in *The Scots Magazine*, September-November 1931; and A. E. Haswell Millar, 'The truth about the tartan', in *S.M.T. Magazine*, November 1947.

A CHILD CAN GROW GOLD TEETH

In 1686, Bernard de Fontenelle published a witty attack on religious orthodoxy and blind obedience to authority entitled *Histoire des oracles*, whose ostensible purpose was to attack pagan gullibility in the fields of oracles and divination.

An example of his satirical method against the credulity of the times concerns the sensation of the Silesian child who was alleged to have grown a gold tooth. Fontenelle wrote: "In 1593, it was rumoured that a seven-year-old Silesian child, shedding its milk teeth, had grown a gold tooth in place of a molar. Horstius, then Professor of Medicine at the University of Helmstedt, wrote an account of the story and asserted that its causes were partly natural and partly miraculous, and that God had made the child a gift of the golden tooth to console Christendom, so mightily oppressed then by the Turks. The consolation and profit that Christianity must have derived from that gift can be imagined! In the same year, lest the tooth lack sufficient historical commentators, Rullandus wrote a further account of it. Two years later, another scholar called Ingolsteterus published a refutation of Rullandus' theory, promptly to be answered by Rullandus. Yet another scholar, one Libavius, collated all that had been written on the subject, adding his own ideas on the subject. Every one of these remarkable treatises would have been quite perfect in its own way, had the tooth in fact been made of gold. But, when a goldsmith was eventually consulted, it was found that the

tooth had been skilfully covered with gold leaf. One notes that all the learned works were written first, and the goldsmith consulted as a last resort.

Nothing is easier than to adopt the same method in every field. Our ignorance is never so clearly demonstrated by our inability to explain existing facts, as it is by fallacious explanations of imaginary phenomena. Not only — in other words — do we lack principles for arriving at the truth, but we go to elaborate lengths to hold other principles that enable us to commit errors”.

TEILHARD DE CHARDIN

In *Le phénomène humain* (*The Phenomenon of Man*, London, 1959), the French Jesuit Pierre Teilhard de Chardin (1881–1955) brought to a head (though not then to a conclusion) his meditations on the nature of man.

The book was hailed in France on publication in 1955 as the Book of the Year, and even the Book of the Century. Its sensational sales, increased by news of its author’s death just previously the same year, were made to the general public as well as to the scientific public at which it was nominally aimed. “Yet the greater part of it”, writes P. B. Medawar in *Mind* (January 1961), “is nonsense, tricked out with a variety of tedious metaphysical conceits, and its author can be excused of dishonesty only on the grounds that before deceiving others he has taken great pains to deceive himself”. P. B. Medawar, a great immunologist and Nobel Prize-winner, dissects the style of Teilhard, which is sufficiently obscure to conceal in many places the paucity of ideas and the laxity of logical structure. He places *The Phenomenon of Man* in the tradition of German *Naturphilosophie*, which “does not seem even by accident (though there is a great deal of it) to have contributed anything of permanent value to the storehouse of human thought. French is not a language that lends itself naturally to the opaque and ponderous idiom of nature-philosophy, and Teilhard has accordingly resorted to the use of that tipsy, euphoric prose-poetry which is one of the more tiresome manifestations of the French spirit”.

Teilhard’s theory is founded on the belief that the fundamental process in the entire universe is *evolution*, that “general condition to which all theories, all hypotheses, all systems must bow . . . a light illuminating all facts, a curve

that all lines must follow". Or, to put it in another Teilhard way, evolution is "the continual growth of 'psychic' or 'radial' energy, in the course of duration, beneath and within the mechanical energy I called 'tangential' "; evolution, then, is "an ascent towards consciousness". Medawar infers that evolution, in Teilhard's view, must have a 'precise *orientation* and a privileged *axis*' at the topmost pole of which stands Man. Teilhard leaves his 'scientific' argument for a metaphysical argument which is very simple: our present consciousness must culminate in a Supreme Consciousness, which apparently assimilates to itself all our personal consciousnesses, and is known in Teilhard as 'Omega'. Although already in existence, 'Omega' is added to progressively. In Teilhard's words: "All round us, one by one, like a continual exhalation, 'souls' break away, carrying upwards their incommunicable load of consciousness", and so the end-product is "a harmonized collectivity of consciousnesses equivalent to a sort of super-consciousness".

Teilhard is a typical example of those for whom 'life' and 'nature' are governed by one principle and only one principle, which would be interesting and even significant if the 'Only One' believers would for a moment agree on what that single principle is. For Lévi-Strauss it is deep structures, for Freud it is sexuality. "Like all things in the universe", for Teilhard, "life is and can only be a 'size' of evolutionary nature and dimensions . . . This is the fundamental fact and . . . the evidence for it is henceforward above all verification, as well as being immune from any subsequent contradiction by experience".

P. B. Medawar has denounced the lack of sense, of logic, and of scientific rigour throughout Teilhard's best-known work. How, then, has it become so popular? Sir Peter explains that "just as compulsory primary education created a market catered for by cheap dailies and weeklies, so the spread of secondary and latterly of tertiary education has created a large population of people, often with well-developed literary and scholarly tastes, who have been educated far beyond their capacity to undertake analytical thought". The attractions of Teilhard's woolly theoscience include the following points:

1. *The Phenomenon of Man* attacks scientists as shallow beings interested only in materialistic proofs. As Sir Peter explains: "Laymen firmly believe that scientists are one

- species of person. They are not to know that the different branches of science require very different aptitudes and degrees of skill for their prosecution. Teilhard practised an intellectually unexacting kind of science in which he achieved a moderate proficiency. He has no grasp of what makes a logical argument or of what makes for proof. He does not even preserve the common decencies of scientific writing, though his book is professedly a scientific treatise”.
2. The book’s style is almost totally unintelligible, and new terms are introduced to define concepts which remain undefended. The opacity of Teilhard’s style is construed as evidence of the author’s profundity, which is a *non sequitur* familiar to all who make a habit of scanning (dare one say it?) crank literature.
 3. Teilhard diagnoses a terrible ‘malady of space-time’, and proposes a remedy so obscure that anyone can claim to practise it. [Sure enough, a Phenomenon of Man Project has been set up in 1962, at 8932 Reseda Blvd., Suite 204, Northridge, California 91324 and there is now a Pierre Teilhard de Chardin Association of Great Britain and Ireland.]

Sir Peter Medawar “read and studied *The Phenomenon of Man* with real distress, even with despair. Instead of wringing our hands over the Human Predicament, we should attend to those parts of it which are wholly remediable, above all to the gullibility which makes it possible for people to be taken in by such a bag of tricks as this. If it were an innocent, passive gullibility it would be excusable; but all too clearly, alas, it is an active willingness to be deceived”.

Source: Sir Peter B. Medawar, (review article), *Mind*, January 1961.

THE BRITISH TELEPHONE SERVICE HAS ALWAYS BEEN A GOVERNMENT MONOPOLY

The Post Office (formerly the General Post Office) took over the running of the telephone service in 1907, but the first telephones were in operation as early as 1881, when they served a five-mile radius from the centre of London, five years after the first intelligible sentences were exchanged by telephone between Alexander Graham Bell and an assistant.

ROGO AND PSYCHIC TELEPORTATION

D. Scott Rogo claims that phenomena connected with the Bermuda Triangle (q.v.) in particular, and 'mysterious disappearances' in general, are caused by psychic teleportation. (See also **APPORTS**).

D. M. Stokes of Avon, Conn., reviewing Rogo's *The haunted universe* (New York, 1977) in *The Journal of Parapsychology*, vol. 41, 1977, objects strongly to the flimsy nature of the 'evidence' and concludes: "Rogo's theoretical edifice is constructed on a foundation of sawdust". Again, Rogo "proposes a theory to explain phenomena that probably do not occur and, if they did, the theory need not be invoked to explain them".

DEVELOPMENT AID NARROWS THE GAP BETWEEN ADVANCED COUNTRIES AND THOSE OF THE THIRD WORLD

The President of the World Bank, Robert S. McNamara, wrote in a World Bank report on development strategies released in September 1979 that the growth figures of the developing nations over the decade up to 1978 did not "provide any hope that the so-called 'gap' between the developing and industrialised world might be narrowing".

What is even more alarming, in view of the relative political instability of Third World nations, is the official World Bank view, based on recent experience, that "even if the developing countries were to manage to double their per capita growth rate, while the industrialised world but maintained its, it would take almost a century to clear the absolute gap between them, so great are the differences in the capital and technological base of the two groups".

DEGENERATE ALIENS' DESCENDANTS ARE LIVING IN TIBET

Anything that appears to confirm the amazing confidences of Erich von Däniken is sure of a big welcome among the ignorant and credulous: so give a big welcome to *Sungods in exile: secrets of the Dzopa of Tibet* (Sudbury, Suffolk, 1979), which tells you more than you ever needed to know about a mysterious race of aliens who landed on Earth in the year 1017 and interbred with earthlings, which must be peculiar,

since they are allegedly not human at all, but inhabitants of a far off world to which their descendants desperately long to return.

The author of the book is Karyl Robin-Evans, who claimed to have lived for several months in Tibet among the marvellous Dzopa people, now degenerate. The editor of the book, which was put together after Robin-Evans died in 1974, is David Agamon.

One of the more sensational allegations of *Sungods in exile* is that the present ruler still resides in the crashed space-ship which brought the aliens to Earth.

Further news is expected daily from the China News Agency: in the meantime, please adjust your scepticism so that it doesn't show too obviously. Generations of inbreeding, seems to be a conclusion of the book, lead to an assumption that the inbred must originally have been aliens from outer space. How many island or rural communities must have, unbeknown to themselves, started with Extra-Terrestrial Colonies, etc. etc.? See also THERE IS A GEOGRAPHICAL LOCATION, **SHAMBHALA**, IN CENTRAL ASIA, WHERE THE SAGES LIVE. [Even if one of these two theories were right, the other must be wrong, for sages are not degenerates, and central Asia is rather too far north of Tibet to be helpful]

The magazine *Ancient Astronauts* is understandably quite enthusiastic about the possibility of matings between normal human beings and von Däniken's space gods. Occultists all over the world were listed as being such descendants. The science-fiction writer and keen occultist Robert Anton Wilson writes in his *Cosmic trigger* (London, 1979): "I was pleased to find myself on the list of Godlings. The article asserted that what all of us have in common, besides a proclivity for the higher states of consciousness, is Rh-negative blood. It is a charming theory. The only thing wrong with it is that your humble Narrator happens to have Rh-positive blood. Sorry about that . . .".

TIDES ARE CAUSED BY THE EARTH'S BREATHING IN AND OUT

The *Etymologiae* of St Isidore, Bishop of Seville, compiled about 600 A.D., is one of the first encyclopaedias, and constituted — by the transmission of manuscript copies — a

major source of information in virtually every medieval monastery, college, and cathedral. Bartholomaeus Anglicus, Johannes Balbus, and many other writers were profoundly influenced by the mass of facts and fantasies uncritically mingled. The work of Isidore remained potent in his native Spain up to the Golden Age, and one cannot understand Pedro Calderón de la Barca's major plays without an idea of Isidore's strange mixture of learning and nonsense.

Nobody — least of all the industrious Isidore — can be criticised for falling victim to the ignorance of the times. Isidore's main source of error is his gullibility. Accepting the Christian religion on grounds of faith, he failed to see that not all fields of study were susceptible to dogma, and he quotes the Roman writer Solinus as asserting that tides are caused by the exhalation and inhalation of the Earth (like breath through human nostrils) through passages in the ocean floor.

Another fallacy committed by Isidore in this context, as in others, is the so-called 'pathetic fallacy', by which an illogical connection is made between a natural phenomenon and a human phenomenon superficially similar but actually quite different.

TOADS ARE CONNECTED WITH TOADSTOOLS

Dr Werner Broch writes from Basle that, among the various fallacies connected with toads in volume 1, I omitted their spurious connection with toadstools. Dr Broch reminds us that *Tod* is the German for 'death' and *Stuhl* the German for 'chair' or 'seat', thus bringing together with some force the poisonous nature of the fungus, which the English 'toadstool, comically omits. The Early English origin is 'todestole'.

The modern German word for the toadstool is *der Giftschwamm*, literally 'the poison fungus'.

TOP HAT FALLACY

The celebrated 'Top Hat Fallacy' has been restated by Conrad Waddington in *Tools for thought* (London, 1977, p. 139):

"It is important to realize what a correlation between two variables means and, in particular, what it does *not* mean. It means that, in the population studied (*not* necessarily in all populations), there is a tendency, whose strength is expressed

in the correlation coefficient, for the measurements of the two correlated characteristics on the same individual (say, its height and weight) to vary together; the more one measurement departs from the average, the more the other will do so too. This does *not* mean that one characteristic causes the other; it may do so, but the fact that they are correlated is not good evidence to reach that conclusion. They can both be caused by something else, and have no essential causal relation to each other. This is a very basic point of warning about the misuse of statistics. It is usually enshrined in an old parable, known as the 'Top Hat Fallacy' — and the fact that it is out of date sartorially should not make you forget that it is still bang-on in what it implies. I quote it in the words of a former President of the Royal Society, in his memorandum about how to do operational research: 'Statistical investigation of the population of many cities would show that the wearers of top hats are significantly taller than the average. The missing causally effective variable here is clearly the higher average income of the top-hat-wearing group' ”.

MACHINES ARE CAPABLE OF LITERARY TRANSLATION

The growing sophistication of computer technology has again raised public expectation that literary texts will one day be translated without human intervention.

However, languages are too rich and too full of nuance and ambiguity for literary translation to be left to the mercy of machines, and there will never come a time when Flaubert or Turgenev will be adequately rendered out of French or Russian without human creativity.

The fallacy arose because it is perfectly true that computers can be, and are being, used in the translation process — indeed all computer languages are in themselves a 'translation' from vernacular speech — but merely as aids to human translation.

No evidence has so far emerged to contradict the conclusion of the ALPAC report issued in Washington in 1966: "There is no immediate or predictable prospect of useful machine translation".

Source: George Steiner, *Extraterritorial* (London, 1972, pp. 155–6).

HEINRICH SCHLIEMANN DISCOVERED HOMERIC TROY

No: the city excavated by Schliemann from 1870 to 1873 was the pre-Achaean city, long antecedent to any Troy known in Homeric times. But the site, Hissarlik, was the correct one, as predicted in Schliemann's extraordinarily percipient *Ithaka, der Peloponnes und Troja* of 1869. His *Trojanische Alterthümer* (Leipzig, 1874) appeared in the year that Schliemann started the equally fruitful campaign at Mycenae, on the Greek mainland.

It was Schliemann's successor Dörpfeld, working with money endowed by Schliemann, who finally uncovered the walls of the sixth stratum at Troy (contemporary with the height of the Mycenaean excavations) which Schliemann had wrongly believed to be Lydian.

TRUTH WILL PREVAIL

In 1390, John Gower seemed to believe that "Trowthe mot stonde atte last", and many writers and politicians, lawyers and policemen have either believed the fallacy that truth will always emerge in the end, or at least wanted their readership at large to believe the fallacy.

John Stuart Mill has indicated that the adage has frequently been contradicted by harsh experience: "The dictum that truth always prevails over persecution is one of those pleasant falsehoods which men repeat after one another till they pass into commonplaces, but which all experience refutes. History teems with instances of truth put down by persecution. If not suppressed forever, it may be thrown back for centuries".

Examples that rush to mind include that of Galileo (q.v.) — whose views were vindicated by the Roman Catholic Church as late as 1820 (by Pope Pius VII), and the *Gulag Archipelago* revelations by Alexander Solzhenitsyn which demonstrated the existence of concentration camps not only during Stalin's period, but right up to modern times.

TURKEYS ORIGINATED IN TURKEY

Turkey-fowl originated wholly in the American continent, and were first imported into Europe shortly after the first invaders entered Mexico in 1518. However, they were confused at that

time with the guinea-fowl which entered Europe from Africa via the Turkish colonies (Eric Partridge makes the same error in his *Origins*, 4th ed., London, 1966) and when the two species were subsequently differentiated, it was — inevitably perhaps in a world so inclined to error — the *American* bird which acquired the designation ‘turkey’.

Sources include: *Oxford English Dictionary*.

DICK TURPIN RODE TO YORK ON BLACK BESS

We all know about the famous highwayman’s non-stop ride from London to York on the mare Black Bess, but in fact it never happened. It is a fiction which first occurs in W. Harrison Ainsworth’s adventure novel *Rookwood* (London, 1834) and straight away entered the popular consciousness as the narration of a real event.

Ainsworth based his tale on the exploits of the highwayman Jack Nevison, who rode from Gad’s Hill in Kent (not London) via Gravesend and Chelmsford, Cambridge and Huntingdon, to York along the Great North Road in about fifteen hours to escape the Bow Street runners. There was no mare called Black Bess, and Nevison admitted that he had changed horses several times on the journey.

There was a real Richard Turpin (1706–39), born in Essex and executed at York, but one can discount legends of his being born at any one of a dozen inns on the Great North Road; of the spot on York racecourse still shown as the place where fabulous Black Bess expired; and of Turpin’s being hanged on a trumpery charge of stealing a bridle or shooting a gamecock (he was a confessed murderer and cattle thief).

Dickens poked fun, but apparently not enough, at the accretions to the Turpin legend in a comic ballad he inserted in *The Pickwick Papers*.

Sources include: *Dictionary of National Biography*.

INCREASING A FIGURE BY 200% DOUBLES THE FIGURE

Stuart Campbell of Edinburgh kindly submits the popular fallacy that a sum increased by 200% is *tripled*, not doubled, as many assume without bothering to work it out. The initial 100% is frequently ignored. Thus, 300% of a sum does not treble a given sum: it quadruples it. And so on.

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“The universal and everlasting craving of humanity — to find something to worship”. — FYODOR DOSTOEVSKY, *The Brothers Karamazov*.

SCUDDER KLYCE AND THE UNIFICATION OF ALL KNOWLEDGE

Announced as ‘a verifiable solution of the “RIDDLE OF THE UNIVERSE”’, Scudder Klyce’s first book, modestly entitled *Universe*, was rejected by eighteen publishers, and produced in a mercifully limited edition of a thousand copies by the author, a retired naval lieutenant, in Winchester, Mass.

Allowing Klyce, as an engineer, recognition as an ‘experienced scientist’ and his strange theories the collective recognition of ‘parascientism’, we can listen to the words of John Ziman: “Parascientism is a dangerous disorder for the experienced scientist, tending to lower his sceptical guard, and often bringing out an extraordinary capacity for credulity and self-deception. To those who are afflicted by it, the only answer of the scientific community must be: come with reliable consensible evidence, come with sound argument, and we will be ready to be convinced — but until that day you must not expect us to put much faith in your claims, nor to give much support to a cause in which we do not really believe” (*Reliable knowledge*, Cambridge, 1978, p. 148).

Universe, as if to bolster faulty arguments with sound authority, boasts introductions by the philosopher John Dewey (whom Klyce was later to pillory in the distasteful *Dewey’s suppressed psychology*, Winchester, Mass., 1928), the eminent writer David Starr Jordan, Chancellor Emeritus, Stanford University, and the engineer Morris Llewellyn Cooke.

The attempt to unify all knowledge is a task so hopelessly grandiose as to muffle praise at the author’s audacity: even in the 16th century the scope of science was far too wide to admit

of mastery by any one individual, as Leonardo da Vinci had attempted in vain during the Renaissance.

Specialisation had become essential by the 19th century, and in the 20th century even journalists and science correspondents, bound by the nature of their function to attempt superficial coverage of many scientific topics, were relying to a great extent on secondary sources.

The reader will be able to judge the aims of Klyce in *Universe* from the claims he makes. "Some of the particular things the book does are: Establishes a sound logic. The logic used by the ordinary man is right; that used by Aristotle and nearly all books is wrong. Removes the fundamental error from mathematics, and makes mathematics simple; proves Euclid's 'axiom' about parallels, and intelligibly solves the various problems of non-Euclidian and n-dimension space. Revises and unifies the equations of physics — about a dozen, — and makes a somewhat new one that is easier: — vortex whirls. Shows how gravity works. Shows what is wrong with Newton's law of gravity, and why. Makes Einstein's theory actually intelligible — showing that it is one sort of possible language out of an infinite number of possible valid languages or logics. The book shows that everyday language (Euclid's and Newton's and Christ's) is valid, and the most economical and practical — and uses it. Shows intelligibly what electricity, light, matter, energy, etc., are. Gives birth, life, death of solar system. Shows how to get energy out of atoms, etc. That simple and easy physics is used in the last third of the book to solve qualitatively the more complicated human problems — those of age, growth, death, life, birth, sex, medicine, immortality, good and evil, freedom of will, religious experiences and ethics in general, money, taxes, business principles, value, etc. Proves that the Constitution is right, and shows what democracy is, and proves that it is right and that all other forms of government and 'legal' law are wrong. Proves (verifiably, of course) the doctrines of Christ; disproves the essential ones of Paul and theologians".

Most of us would be interested to feel convinced of a selection from any five of Klyce's dogmas, but we probably own up to enough ignorance to repudiate claims to so much conviction on any one day of the year.

Klyce was upset when his proofs fell on stony ground: even the one about making the Earth fly out of its present orbit

round the sun. His suggestion was to make the Earth field difference surface relatively stronger, making gravity relatively weaker, then “we have in some humanly controlled degree harnessed the solar whirl field to the Earth, and can work ourselves out of the present orbit” [p. 136.]

This *magnum opus* was succeeded by *Sins of science* (London, 1925), which spent most of its time berating the scientific establishment for ignoring the findings of Scudder Klyce, born in Friendship, Tennessee in 1879, and the most misunderstood of men. Of *Sins of science* the author wrote: “This book is unavoidably novel in several ways: 1. It states the answer to the bottom riddle of the universe — states what essential truth or religion really is. 2. It shows that the commonsense man practically knows the answer — and always has, since there have been men. 3. It shows that the real difficulty about essential truth is that the professional teachers of it, the so-called experts, have been tangled up in words. Hence, the book, surprisingly, needs only to show what we common men already know practically: — how words work. 4. Because nearly all our leaders have held the riddle of the universe to be impossible of solution, I have become so interested in stating it clearly that I shan’t be able (and won’t try) to avoid displaying my interest hereafter. And such love of one’s job is unfashionable, and hence novel, in this day of scientific detachment, disinterestedness and cold-blooded neutrality or “objectiveness”. 5. Finally, our intellectuals are teaching basic error, and (refusing to concern themselves with the whole truth) are leading trusting laymen, especially unprotected children, towards destruction. And I am so strongly desirous of showing that error clearly, so that we can avoid its perverted teachers and protect our children”.

Perhaps you can protect your children from some of Scudder Klyce’s errors, while I am explaining to them that ‘disinterestedness’ does *not* mean lack of interest in one’s job or in anything else, but lack of bias, prejudice, or advantage to one’s self.

Readers who have come so far through a morass of empty assertions may feel let down to be told that the bottom riddle of the universe (to use the Klycean phrase) is “That the common man is ordinarily right and sound — that the voice of the people is the voice of God. The final sum of truth is that God, or perfection, or infinite beauty, goodness, justice or happiness exists”. Thus page 422.

Or, to put it rather more succinctly, *Vox populi, vox dei*. But the hilarious fallacy in Klyce's ponderous conclusion — that he is restating the wisdom of the ages which has always trusted that 'the voice of the people is the voice of God' — is that what Alcuin actually *meant* when he wrote the Latin phrase *ca.* 800 in his *Admonitio ad Carolum Magnum* (Epistle 127) was "[We should not listen to those who are wont to say that] the voice of the people is the voice of God [for the voice of the people is bordering on madness]".

It would be grossly unfair to the memory of Scudder Klyce if readers thought that only he had claimed to possess the secret of unifying all knowledge into a single system. Most literatures and cultures possess similar examples. One of the most curious, beyond the sacred scriptures of religious groups which tend to be regarded by adherents as all-sufficient and all-true, is one Bronislaw Trentowski, whose *Grundlage der universellen Philosophie* (Karlsruhe, 1837) was put forward as a complete and ultimate system of knowledge. And nobody should forget the case of 'The Little Red Book' consisting of quotations from the sayings and writings of Mao Zedong (to use the officially-approved *pinyin* romanisation) which seemingly lost some of their magic powers after the death of Mao.

Sir Hermann Bondi, writing on 'The lure of completeness', in *The encyclopaedia of ignorance* ed. by Ronald Duncan and Miranda Weston-Smith (Oxford, 1977), observes that "no understanding whatever is needed of anatomy, physiology, or the properties of leather to establish that one cannot pull oneself up by one's bootstraps. Indeed one can argue that science is possible only because one can say *something* without knowing *everything*. To aim for completeness of knowledge can thus be essentially unsound. It is far more productive to make the best of what one knows, adding to it as means become available. Yet in some sense the lure of completeness seems to have got hold of some of the greatest minds in physics: Einstein, Eddington, Schrödinger and most recently Heisenberg have aimed for 'world equations' giving a complete description of all forces in the form perhaps of a 'unified field theory'. A vast number of hours and indeed years of the time of these towering intellects have been spent on this enterprise, with the end result (measured as one should measure science, by the lasting influence on others) of precisely zero".

A UNIVERSITY EDUCATION IS AN EDUCATION FOR LIFE

The cliché which exhorted all serious young people to obtain tertiary education has been replaced since World War II by the Unesco policy of lifelong education. Furthermore, the rapidity of technological obsolescence, and the speed with which new discoveries and inventions are made combine to force the engineer, doctor, and all other professionals and academics to keep abreast of the literature, to attend refresher courses, and generally to treat their few years of university education as a preparation for learning rather than as an educational end in itself.

USNEA

Usnea, an official drug in the pharmacopeia until the 19th century, was recommended as a curative in the first edition of the *Encyclopedia Britannica* (3 vols., Edinburgh, 1771). Many testimonials to its efficacy were available, having been provided by grateful patients ostensibly cured of wasting or nervous diseases.

This is odd, because usnea was moss. Not the moss that one finds on damp ground or stone, but moss scraped from the skull of criminals who had been hanged in chains! For external applications, the corresponding prescription was a piece of the rope with which the criminal had been hanged, used to stroke on affected skin.

Source: Howard W. Haggard, *Devils, drugs, and doctors* (London, 1929).

V

“Veritatem laborare nimis saepe, aiunt, extinguinumquam”. (It is said that truth is often eclipsed, but never extinguished) — LIVY, *Annales*, XXII, 39.

PASTEUR'S THEORIES OF VACCINATION ARE UNIVERSALLY ACCEPTED

Inoculation against smallpox created an enormous outcry among the ignorant when it was introduced, and there are still millions who reject the theory and practice of vaccination as somehow ‘unnatural’. Current medical opinion advises vaccinating infants at the age of six weeks, and every seven years thereafter.

To take a sample of the effectiveness of smallpox vaccine, in Sweden the decline in smallpox mortality has been phenomenal since compulsory vaccination was introduced in 1816, having enjoyed its widespread practice since 1801. In 1800 there were 2,049 deaths per million population; an average of 623 per million from 1802 to 1811, and an average of 1 per million in the years 1890 to 1899. Vaccination against other diseases has proved equally effective.

Perhaps the most celebrated opponent of smallpox in recent years was George Bernard Shaw (who also objected strongly but fallaciously against pasteurizing milk), but the funniest book advocating the abolition of vaccine is *The blood poisoners* (Croydon, 1965), by Lionel Dole.

Mr Dole feels strongly that instead of vaccine what we need are fresh air, clean living, fruit, and vegetables. John Sladek, in *The new apocrypha* (London, 1974), shows that “across America, healthy, sturdy, suntanned farm children were struck down by polio every summer (when they were getting naturopathic medicines of all types)” before the introduction of the new polio vaccines. It is of course true that vaccinations do not always ‘take’ and that some vaccinations (such as that against smallpox) do not guarantee lifelong immunity. But the

shortcomings of the vaccines that are available should not blind the independent observer to the crucial benefits brought to mankind by those who have developed vaccines.

EVERY VINE IN EUROPE TODAY IS GRAFTED
ON TO AN AMERICAN ROOT STOCK THAT IS
ADAPTIVELY IMMUNE TO THE PEST

Philip Morrison, in a review of Hugh Johnson's *World atlas of wine* (1971), asserts the above fallacy, which is of the false generalisation type. The pest concerned is *Phylloxera vastatrix*, and it is undoubtedly true that *most* European vines living today are grafted on to American root stock.

However, Stanley Ashmore of Maryland has written (in *Scientific American*, vol. 328, no. 3, March 1978, p. 15: "In Hungary, where the sandy soil in a large segment of the growing area is unsuitable to *Phylloxera*, only about 40% of the 2×10^5 hectares of vines are grafted (1971 figures). Romania has a considerable area in American vines that are ungrafted, and even France has some *Vitis vinifera* as well as hybrid 'direct producers' that are not grafted. True, many grapes are grafted as a precaution against *Phylloxera*, but not every vine".

VITALISM

We owe to the Hippocratic school of medicine the interesting fallacy that a mystic demon or *archeus* controls the bodily functions. The school of Democritus held, correctly, that the operations within a living body are controlled by the same mechanical laws of atomic action as prevail elsewhere in the known universe.

Vitalism was common not only in Greek and Roman antiquity, but passed with no diminution of strength to mediaeval medicine and philosophy, then to Paracelsus, van Helmont, and the eminent Swedish chemist J. J. Berzelius (1779–1848), who claimed that it was impossible to synthesize in the laboratory the organic compounds that are produced in plants and animals.

Proof that organic compounds are *not* formed solely by a vital force was given in 1828 by Woehler (1800–1882), who synthesized the organic substance urea (secreted in the urine) by heating ammonium isocyanate.

Even now, however, occultists refuse to credit the proof, despite the fact that many other compounds of plant and animal origin have been synthesized in the laboratory from a variety of inorganic substances.

Sources include: Charles A. Browne, 'Errors in chemistry', in Joseph Jastrow (ed.), *The story of human error* (New York, 1936).

THE NAME 'VOLTAIRE' IS A PSEUDONYM

Numerous writers make the mistake of thinking that François Marie Arouet the Younger's pen-name 'Voltaire' is a pseudonym. It is, however, an *anagram* for 'Arouet l.i.' (Arouet *le jeune*).

CORNWALLIS ON VULGAR AND COMMON ERRORS

Under the pen-name of 'Thomas Brown[e] Redivivus', Caroline Frances Cornwallis (1786–1858) wrote *An exposition of vulgar and common errors adapted to the year of grace MDCCCXLV by Thomas Brown [sic] Redivivus* (London, 1845).

Caroline Cornwallis was an endearing lady, 'large-featured, tall and thin', and with a sparkling sense of humour to irradiate her scholarship. This is one of many 'Small books on great subjects' which she and her friends wrote pseudonymously.

The first part of her *Exposition* ridicules a number of proverbs and popular sayings which may possibly be correct in a certain context but, as a general guide to behaviour and good sense, leave a very great deal to be desired. These sayings are: 'A young man must sow his wild oats', 'A good fellow, nobody's enemy but his own', 'We must do as others do', 'He that spareth the rod spoileth the child', 'A boy should be manly', 'A man is not responsible for his belief', 'Women have no concern with politics', 'Marriage is a lottery', "You can't put an old head on young shoulders", 'Ne sutor ultra crepidam' (Let not the cobbler go beyond his last), 'A little learning is a dangerous thing', 'I will retire from business, and prepare for another world', and 'It is only a white lie'.

Miss Cornwallis added essays on fallacies concerned with genius, evil spirits, 'An enquiry if ignorance be requisite to

women' (as a persuasive feminist and educator her answer is a resounding 'no!'), 'Of errors in grammar' (including the difference between 'shall' and 'will' which causes quite as much difficulty 135 years later), 'Of certain errors current in regard to disease and medicine', and 'Of the condition of society and touching the female sex'.

The influence of Miss Cornwallis and her circle was directly and indirectly a cause of much improvement in the treatment of women in politics, business, and public life, and in the home. The gentle polymath was firm in her rejection of received errors, and well deserved her chosen pen-name.

W

“We spoke already of lying and I gave a possible definition of psychology as ‘the study of lying’. So one of the first and most important things for you to observe is lying. Very much akin to lying are our illusions, things about which we deceive ourselves, wrong ideas, wrong convictions, wrong views and so on. All these must be studied because until we begin to understand our illusions we can never see truth”. — P. D. OUSPENSKY, *The fourth way* (London, 1957).

SALEEBY ON WAR FALLACIES

In the *Pall Mall Gazette* (which was later absorbed into *The Evening Standard*), C. W. Saleeby recorded the fallacious defence of war as a eugenic tool, the argument being that after a protracted war the weaklings will die out, leaving the tougher remnant to breed stronger children in the next generation.

As Saleeby writes: “Nations now select their healthiest young manhood, and during war the death rate is appallingly high. Thus war as practised by civilised communities [but what is one’s definition of civilised?” — Ph. W.] is what I call dysgenic, a direct agent of racial degeneration”.

But has it always been like this? “Recruits were always wanted for the protection of the far-flung Roman frontier. The recruiting officer, I take it, said to the physically inferior, ‘You are not good enough to be a Roman soldier. Stay at home and be a Roman father’ ”.

But surely war makes a *man* of you? “No”, retorted Lord Robert Baden-Powell, “I believe that training in citizenship, character, discipline and patriotism is infinitely more important than soldiering, for which they are also essential foundations”.

Source: C. W. Saleeby, ‘Some fallacies about war’, in *Pall Mall Gazette*, 29 December 1913 [N.B. Before *both* World Wars! Shall we never learn?]

PRISON OFFICERS ARE TECHNICALLY KNOWN AS 'WARDERS'

J. Crane of Morecambe, Lancs., has written that the term 'warder', still used ubiquitously in radio, television, and books, was officially banned in the year 1921, when the term was changed to 'prison officer'.

WATER ALWAYS FREEZES AT 32°F (0°C, 273.15K)

'Freezing point' is not always exactly what it seems, as you can easily test experimentally, by reducing the temperature of pure, still water. Only when it is shaken, at a few degrees below freezing point, will the water turn rapidly into ice. Alternatively, one could make ice quickly by adding some ice-crystals or other solid matter.

Another fallacy is to assume that all ice must be at the same temperature. Modern low temperature research ought to have corrected the popular view, for the range now possible is from 32°F (0°C, 273.15K) down to 1 in 5.46×10^6 of the melting point of ice.

A third fallacy concerning low temperatures is the notion that it is possible to record absolute zero, equivalent to -273.15°C or -459.67°F.

"ELEMENTARY, MY DEAR WATSON!"

I may be blind, forgetful, or merely careless, but I have read all the Sherlock Holmes stories of Sir Arthur Conan Doyle, and cannot remember ever having come across on one single occasion the phrase which is allegedly characteristic of the great detective. It crops up, though not as a quotation, on page 100 of Hesketh Pearson's *Conan Doyle: his life and art* (London, 1946), but not — so far as I know — in the works of Doyle himself. Can any reader prove the contrary?

THE WHITE GOD OF SOUTH AMERICA AND - MEXICO

Pierre Honoré's *Ich fand den weissen Gott* appeared in Frankfurt in 1961. His thesis is astoundingly simple: that the Toltecs and Aztecs of Mexico, the Incas of Peru, the Maya, the Aimará and the Chibcha Indians all worship the same white god, who came to them in prehistoric times from the east. He was, for example not only the fifth King of the Toltecs,

Quetzalcoatl (q.v.); he or his followers carved the Cretan inscriptions on a stone allegedly found by Honoré not far from Manáos, in the heart of the Amazonian jungle of Brazil, and dated about 1500 B.C.! "There is much to suggest", states Honoré on page 216 of the English edition, published by Hutchinson as *In quest of the White God* (London, 1963) "that the time was about 3,500 years ago; that a man from the Old World discovered the new continent then and experienced a surprising 'sea-change'. From a simple sailor he was transformed into an immortal god, the White God of the Indians". In fact, there is virtually nothing whatsoever to suggest the main arguments of Honoré's book.

Phoebe Adams has written in *Atlantic* (May 1964): "The author, floundering in his morass of parallels, myths, rumors, and assumptions, is so unconscious of the picture he is creating of Latin America as a prehistoric Grand Central Station, continually tramped through by Melanesians, Chinese, Phoenicians and Cretans, that the project arouses sympathy as well as amusement".

Not quite so much amusement was evinced by the New York *Library Journal's* reviewer (March 1964):

"All the outworn theories prevalent 50 years ago are present . . . No solid evidence is offered for Honoré's conjectures. He skips back and forth from culture to culture without regard for historical continuity so that one is left in a state of confusion. This book contributes nothing to a very important problem, and it does not even have the tongue-in-cheek humor of Gladwin's *Men out of Asia*".

One is worried at the lack of accountability that publishers seem to enjoy. The illogical speculations of men like Kolosimo, Honoré, and von Däniken earn fortunes for publishers as well as for authors, and there is thus a financial incentive to publish books that one knows to be scientifically questionable. On the other hand, such publishers will argue, our democratic way of life depends for its health on the existence of plurality in opinion, whether political or literary. Once we reject manuscripts which are intrinsically saleable, because they do not depend on closely-reasoned argument and expert knowledge, we risk censoring also those worthwhile manuscripts that contain the germ of genuine creativity or discovery. Furthermore, the cynical publisher might add, if we do not publish Charroux or E. T. Stringer, there will be

other publishers glad to make money, so why should we not reap the reward, if mankind is so gullible as to buy and read their books? The argument is insoluble, since capitalism and freedom-to-read are apparently inseparable in the best democracies, and their claims in this sphere are contradictory.

The best publishers will, however, continue to reject as a matter of conscience those manuscripts which make no real contribution to understanding the world we actually live in.

THERE IS NO DIFFERENCE BETWEEN A WOOD-CUT AND A WOOD-ENGRAVING

The two terms are used interchangeably by the careless, but "strictly speaking, a wood-cut is cut with a knife along the plank, while a wood-engraving is cut with a graver or burin on the cross-section, usually of a piece of box-wood. The latter makes for harder wood and therefore permits a much greater delicacy in the design. But the terms are used indiscriminately by most cataloguers (and many other people) for any illustration printed from wood as distinct from metal".

Source: John Carter, *A B C for book-collectors* (3rd ed., London, 1961).

XYZ

"You sit there, you plump beauty, still buying neckties from sidewalk sharpies, still guessing which walnut shell contains the pea, still praying along with Elmer Gantry. America, sometimes I worry about you". — MIKE McGRADY, *Stranger than naked, or how to write dirty books for fun and profit* (New York, 1970).

THE YETI AND THE DOLPHIN ARE THE RESULT OF ADAPTATION EXPERIMENTS MADE BY EXTRA-TERRESTRIAL VISITORS

"If astronauts came here a million years ago, what did they do? We may assume that they made adaptation experiments with prototypes brought from their planet: the yeti on land, the dolphin in the sea. Perhaps they tried to adapt a species of man who was the only completely successful experiment, the only one with a perfect adaptation and a perfect intellect", writes Robert Charroux, on page 351 of *Lost worlds* (London, 1973).

We have however not a shred of evidence to suggest that astronauts came to Earth at all; that they experimented with any life, whether brought from 'their planet' or found on Earth; that any such animal as the 'yeti' exists (see volume 1); that the dolphin shows any sign of adaptation; and that any man has, had, or will have a 'perfect' intellect in any meaningful sense of the word. See also **THE DOLPHIN IS A HUMAN FOETAL MONSTER**.

One is nonplussed that a publisher's editor can allow such a tissue of unwarranted assumptions to get into print, and that the public should be willing to buy books consisting of little else but these unwarranted assumptions. Or is it all a parody of Erich von Däniken? or vice versa?

METCHNIKOV AND THE POWERS OF YOGURT

A Russian pathologist, Ilya Metchnikov, who died at the age

of 71 in 1916, is cited by Benjamin Walker (in his *Encyclopedia of metaphysical medicine*, London, 1978) for a belief (unchallenged by Walker) that man does not die or age naturally, but poisons himself by autointoxication. His large intestine is submitted to continuous putrefaction, a process that can be arrested. Metchnikov's method of obtaining immortality is not the medieval Philosopher's Stone, but — yes, you've guessed it — yogurt. His theory was that the lactic-acid bacillus present in yogurt would, if taken in large enough amounts, stop putrefaction. His example of longevity (not very convincing, statistically) was that of the Bulgarian peasants, whose staple diet was alleged to be kumiss, fermented mare's milk.

Metchnikov's ideas were followed blindly throughout much of Europe in the early years of this century, and were taken up again by Gayelord Hauser in such books as *Look younger, live longer* (London, 1951).

Unhappily for Metchnikov, Hauser, and all those others who teach much the same thing, or follow the faddists, the large intestine is *not* submitted to continuous putrefaction, for our intestinal bacteria are by and large a necessary part of our biological structure. The parts of the body do not all age at the same speed, but they *do* all age. There goes our dream of human immortality again!

It is equally fallacious — and many young girls who live on yogurt and little else seem to be unaware of it — that yogurt contains no nutrients whatsoever other than those in milk.

ENGLISH MONARCHS HAVE ALWAYS BEEN ADDRESSED AS “YOUR MAJESTY”

The first English monarch whom we know to have been addressed as “Your Majesty” was Henry VIII. The mode of address varied from reign to reign so that, for instance, we have records of “Your Grace” (Henry IV), “Your Excellent Grace” (Henry VI), and “High and Mighty Prince” (Edward IV).

THE ZODIAC HAS THIRTEEN SIGNS

The ‘zodiac’ (Gk. *o zodiakos kuklos*, ‘the zodiacal zone’, *zodion* meaning ‘a little animal’) is an astrological area in which lie the paths of the sun, the moon, and the chief planets

of our solar system. The art of divining the fate or future of persons from the relative positions of the sun, moon and planets is astrology (technically, 'judicial astrology') and is a fallacy dealt with in volume 1 (pp. 14-16).

However, the 12 constellations which corresponded at the time of Hipparchus (fl. 161-127 B.C.) to the signs Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius, and Pisces, so that the sign Aquarius corresponded to the constellation Aquarius, no longer correspond, as a result of equinoctial precession. The system was based on 21 March as the first point in Aries, whereas it is now in Aquarius, so all the signs are wrong. As the whole of astrology is based on the fallacious idea of correspondence between heavenly bodies and earthly lives, this further error in astrological predictions and assumptions is perhaps not as crucial as a comparable error would be in a serious discipline.

What is perhaps astonishing is that an author has recently discovered a 'thirteenth' sign of the zodiac which had escaped the notice of all previous writers. James Vogh, in *Arachne rising: the thirteenth sign of the zodiac* (London, 1977), suggests that a thirteenth sign was in fact 'lost' in the mists of history. Needless to say, if the hypothesis were true it would be useless, but it is almost certainly false.

THE LAST FALLACY

It should by now be unnecessary to warn the reader that what is read, seen, or otherwise perceived is not to be trusted without caution, without scepticism. Any warning of this nature is not partial, but applies equally to every attempted refutation of the false and irrational to be found in this book. The author hereby warns the reader against the author: that he is a creature like all authors born with preconceptions which he finds difficult to shake off, in a particular country with its own ethos and set of prejudices, and at a given time when — as always — the pursuit of truth is not the overriding interest of the majority.

A Dictionary of Common Fallacies, like any other book, is a fallible compilation carrying, despite the author's best intentions, its own defects and misconceptions. *Caveat lector*.

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