

cases, however, the Indians reversed the arms to turn right, and in some cases they used curved rather than straight lines. Also, they drew separate Z-like forms which would form swastikas if moved together to cross. These variations, it is believed, may show how the Indian artists experimentally hit upon

their left-hook swastika form.

The swastika has been called one of man's earliest ideas in design, when he began to draw circles, squares, crosses and other symbols. It is found on pottery in Mesopotamia made before 3000 B.C.

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ascribed by the astrologers before preliminary observational tests of the influences could have been made, and even before accurate orbits could be assigned to the planets."

The committee quotes a statement prepared by the Society for the Psychological Study of Social Issues. In this, it is said, "Faith in astrology or in any other

PSYCHOLOGY—PSEUDOSCIENCE

Astrology Lacks Every Scientific Foundation

It Is Also Declared To Be Psychologically Harmful Because It Encourages Flight From Real Life Problems

ASTROLOGY, the tenets of which hold that the stars and planets exert an influence on human events by which predictions may be made in advance, is denounced as lacking every conceivable scientific foundation as well as being psychologically harmful, in a report issued by the Boston and Cambridge Branch of the American Association of Scientific Workers.

It was prepared by a committee of which Dr. Bart J. Bok, associate professor of astronomy, Harvard University, is chairman, and Mrs. Margaret W. Mayall, research associate of the Harvard Observatory, is secretary. Methods and claims of the astrologers are briefly summarized, and reasons given why they are not accepted by scientists. The complete report will be published in the *Scientific Monthly*, organ of the American Association for the Advancement of Science.

"An interpretation of the rules laid down by astrologers demands the existence of an unimaginable mechanism of action," it is stated. "Astrologers have not provided us with as much as a sound

hypothesis that might serve as a basis for their speculations. Astrologers attempt to offset this lack of a sound working hypothesis by the introduction of terms and concepts that are unknown to physicists and astronomers. No one, with a high school training in physics, should be fooled into accepting an explanation of the laws of astrology in which the term 'cosmic vibration' figures prominently.

"Scientists would feel justified in considering astrology as a legitimate field of scientific inquiry if astrologers could claim that its basic rules had been established through a rigorous study of correlations. This is not the case. The rules by which astrologers interpret their horoscopes have not been derived from any known experiments or observations. Astrologers frequently claim the observational basis to be in the experience of forgotten generations far back in antiquity, but pure superstition can claim as sound a basis. In the cases of planets discovered in our times (Uranus, Neptune and Pluto) the evidence is conclusive that their influences on men were

Science on the Radio

SUNDAY

"March of Health," dramatized presentation dealing with public health, MBS, 1:00-1:15 p.m.

WEDNESDAY

"Doctors at Work," dramatic survey of many facets of medical practice, produced in cooperation with the American Medical Association, NBC Blue, 10:30-11 p.m.

THURSDAY

"Adventures in Science," science news of week surveyed by Watson Davis, director of Science Service, and presenting a guest scientist, CBS, 3:45-3:55 p.m.

FRIDAY

"Medical Information Bureau of N. Y. Academy of Medicine," talks by notable figures in medical world, MBS, 10:00-10:15 a.m.

"Radio Magic," dramatization, and commentary on radio phenomena by Dr. O. H. Caldwell, NBC Blue, 7:15-7:30 p.m.

"Unlimited Horizons," dramas and discussions of physical sciences produced in cooperation with the University of California, Stanford University and the California Institute of Technology, NBC Blue, 11:30-12:00 p.m.

SATURDAY

"This Wonderful World," natural history quiz among school children visiting Hayden Planetarium in New York, MBS, 1:00-1:15 p.m.

"Highways to Health," talks arranged by Dr. Iago Galdston, N. Y. Academy of Medicine, CBS, 1:15-1:30 p.m.

"The World is Yours," dramas of world of science, based on Smithsonian Institution exhibits and expeditions; produced in cooperation with U. S. Office of Education, NBC Red, 5:00-5:30 p.m.

"Man and the World," dramatic panorama of scientific exploration, discovery and research; produced in cooperation with the Chicago Museum of Science and Industry and the American Museum of Natural History in New York, NBC Blue, 8:15-8:30 p.m.

Eastern standard time throughout.

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SCIENCE NEWS

occult practice is harmful in so far as it encourages an unwholesome flight from the persistent problems of real life. . . . It is against public interests for astrologers to spread their counsels of flight from reality."

Though no careful, extended, statistical study of the success or failure of astrological predictions, which might prove a decisive test, is known ever to have been made, statistical tests of the supposed broad influences of the planets and zodiacal signs have failed to verify these claims, the report declares.

"Until such correlations are established," the report concludes, "scientists can do a valuable service to society by pointing out publicly that the predictions lack every conceivable scientific foundation."

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ARCHAEOLOGY

Reveal Forgotten Wife Of Totalitarian Pharaoh

TOTALITARIAN Pharaoh Unas, who ruled Egypt in the twenty-ninth century before Christ, had a very completely forgotten wife, it is now revealed by archaeologists who have unearthed and entered the tomb of a Queen Nebet among royal burials in Sakkara.

The very name of Queen Nebet is unfamiliar to modern Egyptologists, but Zaki Y. Saad, leader of the explorations, has found convincing evidence in the tombs to conclude that she was undoubtedly the royal wife of Unas.

The empty tomb, pronounced richly sculptured, is adorned with a great array of inscriptions, adding to knowledge of Egypt's fifth dynasty. A portrait of the queen delicately holding a lotus flower is over a doorway.

Pharaohs in the fourth to sixth dynasties are known to have ruled Egypt as absolute monarchs by divine right, and to have held all high offices in the government in dictator fashion, including direction of the armies, legal affairs, and the highly important religious functions of the state. Pharaoh owned all land in Egypt, and was the only earthly inhabitant who looked forward to a heavenly life with the gods.

When the tomb of Pharaoh Unas was first entered in modern times by archaeologists in 1881, the royal burial had been robbed, and a few scattered bones are the only remains of this one-time powerful king.

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Evergreens

FAR NORTHERN lands, we are accustomed to assume without too much thinking, are lands of evergreens. When Kipling speaks of "dominion over palm and pine," it needs no explanation to make it clear he means the wide sweep of the British Empire from the tropics to the arctic seas. Evergreen trees and snow are always thought of together.

Actually, however, a census of evergreen species shows a steady increase in exactly the opposite direction, from north to south rather than from south to north. The greatest and richest evergreen forests in the world are those of the moist equatorial regions, like the valleys of the Amazon and the Congo.

The evergreen forests of the Far North are monotonously composed of only a few species of trees—frequently only one species for many hundreds of miles. The evergreen forests of the tropics comprise thousands of species, with hundreds of the most varied aspect crowded on one small island. Be it not forgotten that the palm, too, has evergreen leaves, and so has the breadfruit tree, and many of the figs, and the mango tree, and many another tree besides, so strange that even their names are unfamiliar to us.

The trouble with us is that we have become used to thinking of evergreens and the needle-leaved conifer trees as synonymous. This is far from being the case. The majority of evergreen leaves are broad leaves; pine and spruce and fir are exceptions rather than the type or the rule.

Even in lands as far from the tropics as our own southern states there are many species of broad-leaved evergreen trees and shrubs; several kinds of magnolias, live-oak, bay trees, holly, mountain laurel, rhododendron, palmetto—any good Southerner could extend the list to your pleasure and conviction.

While of course there is no way of proving it conclusively, it seems likely that broad-leaved evergreens do not invade the North because the weather is too rough. The whooping winds of northern winters would pull at the broad surfaces of their leaves like a gale at the rigging of a ship improvidently caught with all sails set. The heavy loads of ice imposed by glaze storms would be more than any limb, however mighty, could bear. The needle-leaves of the conifers, close-reefed against both wind and ice, are better adapted for survival in extreme winter weather. So the conifers rule the Far North, and the broad-leaved evergreen trees the South.

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ENGINEERING

Winter Scenes in Movies Made in Refrigerated Studio

WHEN you see a movie scene showing actors in the snow, suffering from the cold, their breath showing in clouds, you cannot be sure that it was taken in winter, or even in the mountains. Perhaps it was made in the heat of a southern California summer day, in a special cold studio which was described to the meeting of the Society of Motion Picture Engineers in Hollywood by R. Van Slyker.

Despite the heat from the usual studio lighting system, the studio temperature can be kept at 21 degrees Fahrenheit, with 85 degrees temperature outside. Under these conditions it is not necessary to use untoasted cornflakes for snow, which is the practise in ordinary "winter" scenes. Portable blowers grind 50-pound cakes of ice into powder, and expel it through special nozzles.

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INTERESTED? in Science

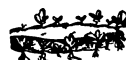


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