

ARCHAEOLOGY

Ancestry of the Alphabet Traced to New Source

THE REVOLUTIONARY verdict that we inherit our ABC's from a little-known people of northern Syria—not from the famous Phoenicians of Syria—is announced by Dr. Julius J. Obermann, professor of Semitics at Yale University.

His discoveries, which contradict the familiar school book lesson that our alphabet is traced back through the Greeks to the Phoenicians, were reported before a joint session of the Yale Classical Club and the Linguistic Club.

Dr. Obermann obtained his evidence by study of cuneiform alphabet writings on clay tablets unearthed six years ago at Ras Shamra in Syria.

Ancient Greeks themselves gave the world the impression—wrongly, Dr. Obermann considers—that their alphabet came from the Phoenicians in Syria. The theory has persisted throughout history because no one knew of any other alphabet system Greeks could have borrowed. The Ras Shamra discoveries reveal a people who had an alphabet made by impressing wedge-shaped or cuneiform symbols in clay, as early as the second millennium before Christ. Dr. Obermann's study of this alphabet shows significant links relating it to the Greek alphabet by ancestry.

The Greeks, he explains, borrowed an archaic form of this Semitic alphabet and preserved it. Meanwhile, the Semitic

alphabet changed and developed in its home country and evolved into the form used by the Phoenicians, the Moabites, and the Hebrews.

Tracing the alphabet to Ras Shamra ancestry dissolves difficulties that have perplexed alphabet historians. As an example, Dr. Obermann cited the point that Greeks employed many more symbols than Phoenicians did in their alphabet. How to account for the so-called non-Phoenician elements was a problem. But, he said, these elements can be shown "one and all to be present in the cuneiform alphabet from Ras Shamra."

Another discrepancy in efforts to link the Phoenician with the Greek alphabet was the fact that Greeks used more alphabet symbols for phonetic values than Phoenicians did. Such discrepancies in function disappear when the Greek is compared to the Semitic writings from Ras Shamra, he stated.

The tablets preserving the long-lost cuneiform alphabet of Ras Shamra are the sacred literature of a Semitic kingdom known to have flourished in Syria in the north of the land of Canaan. Ras Shamra stands where the kingdom had its ancient center.

In adapting the cuneiform characters impressed into soft clay to a technique of writing with a blunt instrument on a hard surface, the Greeks, and the Phoenicians as well, made certain necessary changes, now explained.

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acid. This acid helps the body get rid of certain kinds of poisons by a chemical process of detoxification. The body gets its supply of the acid from food and from its own protein building blocks. When there is poison in the body, all available glycuronic acid will be used to detoxify the poison, and if the food source of the acid is low, none of the acid will be left over for mucin production. This leaves the stomach and digestive tract unprotected.

Animals deprived of a food source of glycuronic acid and given menthol soon showed signs of poisoning. Dr. Manville found Those animals which survived the poisoning for two to four days were examined after death and found to have ulcers in the stomach, gall bladder, pylorus and both large and small intestines. These ulcers resembled markedly those occurring in vitamin A deficiency.

Liver Affected

Glycuronic acid does its detoxifying job in the liver, so any damage to that organ will predispose to an earlier appearance of damage to the mucous surfaces, Dr. Manville points out. He believes that vitamin A is involved in this mechanism, but the exact connection between the vitamin and the detoxifying acid and the development of ulcers cannot be explained without further investigations.

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MEDICINE

Connection Found Between Vitamin and Poison Protection

A CONNECTION between vitamin A and a mechanism for protecting the body from poisons is suggested by experiments reported by Dr. Ira A. Manville of the University of Oregon Medical School. (*Science*, Jan. 9.)

One of the signs of vitamin A deficiency is damage to mucous tissues such as line the inside of the eyelids. The same sort of change, Dr. Manville

finds, occurs in the mucous lining of the digestive tract when vitamin A is lacking in the diet. There is an actual decrease in the mucus-secreting cells, and the stomach and other parts of the digestive tract are consequently more easily injured, with ulcers and erosions resulting.

Mucin, which protects the lining of the stomach, has for one portion of its molecule a substance called glycuronic



MAKING JOJOBA OIL

Dr. Robert S. McKinney, U. S. Department of Agriculture caught in action in his laboratory making oil from the jojoba nut seeds such as those shown on the facing page.

BOTANY

Shrub Rivals Whale In Producing Prized Oil

OIL very much like the prized sperm-oil of the whale in certain chemical and physical properties is produced from the seeds of a shrub that grows in the Southwest and in Mexico, chemists of the U. S. Department of Agriculture have discovered. The plant's name is spelled jojoba by the Mexicans, and is pronounced hohoba. Botanists say it is distantly related to the boxwood, and give it the Latin title *Simmondsia Californica*.

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ENTOMOLOGY

Find That Mosquitoes Winter in Twilight Caves

BEARS are not the only beasts of prey that spend the winter in caves. Animals much smaller than bears, but much more likely to bite the average citizen, to wit: mosquitoes, also hibernate in natural caverns, Prof. J. D. Ives of Carson and Newman College, Jefferson City, Tenn., reported.

With the aid of personnel from F.E.R.A. and N.Y.A., Prof. Ives explored a number of Tennessee caves during fall and winter months, and found a total of more than 3,000 of the insects. Almost all of them were females, and the great majority belonged to the genus *Anopheles*, notorious as malaria carriers. Relatively few, however, belonged to the particular species that is the worst offender in this respect; most of them belonged to a species that prefers the blood of cattle to that of human beings, though even these are capable of transmitting malaria on occasion.

In Twilight

Practically without exception, Prof. Ives and his workers collected their mosquitoes in the twilight zone of the caves, where full daylight does not penetrate, yet where it does not become pitch-dark. This is the kind of light many species of mosquitoes prefer; and the twilight zone also gives them the degree of air humidity they like best. Altogether, then, caves offer good homes for mosquitoes.

Prof. Ives suggested methods of spraying that might be worth trying, where caves harboring mosquitoes are too near human habitations.

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RIVAL OF THE WHALE

From these native jojoba nut seeds can be extracted a non-fatty oil resembling that of the sperm whale very closely. The nuts are found in Arizona, Southern California and Western Mexico, where they grow on bushes from three to 15 feet high.

AERONAUTICS

Records Loads on Airplanes During Gusts in Bumpy Flight

A DEVICE that automatically records the ups and downs of a bumpy airplane flight has been developed by the National Advisory Committee for Aeronautics, it was revealed to the Society of Automotive Engineers meeting in Detroit.

Research engineer Richard V. Rhode of the NACA laboratories at Langley Field, Va., disclosed the operation and recording of his so-called V-G recorder which shows the simultaneous effect of air speed and the acceleration of gravity during a gusty flight.

To airplane passengers such a bumpy flight often produces air sickness and nausea but to the airplane designer it means a more serious constructional problem. During a gusty "bump" the loads on the plane increase and decrease rapidly and powerfully. Some knowledge of how large these bump factors are must be obtained to permit a safe margin of strength to be built into the

plane. And at the same time too much strength, with its accompanying weight, is not wanted, for present-day planes have to be economically profitable to operate.

By an ingenious coupling of levers which activate a stylus rubbing on smoked glass, the NACA recorder gives a permanent record of how the effect of gravity combines with air speed. In both land transports and seaplanes the device has now taken records for over 20,364 hours in the air and traveled over 3,500,000 miles in doing it.

It is found that while the ups and downs of fairly smooth flight seldom exceed an additional half G (half the pull of gravity) either plus or minus, there may be times when a plane is riding through a squall storm that the additional acceleration may rise to 3 G or more. It appears that these larger values are obtained at speeds of about 180 miles an hour, (*Turn to page 45*)