Some of the leaders in current geological thought are what Diener, in the Introduction to his admirable little book on Biostratigraphy, calls devotees of geoposie, geotheosophie, or transcendental geology, and it is for these that the story of Antaeus originated several thousands of years ago, although it contains a moral that all of us can reflect upon with profit.

Let me recall what finally happened to Antaeus. Heracles, discovering the apparently hidden source of his strength, lifted him up and held him away from the earth, and thus was able to crush him to death, and so he perished miserably.

According to their varying temperaments the wisdom of all of the ancients voices the same admonition for geologists. We find in the book of Job the phrase "Speak to the earth and it shall teach thee," and be it remembered that it is only in this way that a geologist may acquire wisdom—it is not obtained by floating above the clouds with Jupiter, nor by projecting oneself in imagination into the realm of his brother Pluto, and I believe that much that passes as science in current geological writings is not science at all, however pleasing it may sound.

The same thought is repeated for us in the words of the saintly flower of medieval monasticism, the abbot of Clairvaux, who says: "Trees and rocks will teach what thou canst not hear from a master." (Bernard, 1090–1153.) It behooves us then, if we are to add a chapel or a pinnacle, or even an additional column, arch or foundation stone to the Temple of Geology, to stop our ears to the lure of the sirens of speculation, and the imaginary spiritualistic voices of arm chair philosophy, and to hie ourselves to the seashore and the rocks.

Otherwise the fate of Antaeus is sure to overtake us, if it has not already done so.

EDWARD W. BERRY
THE JOHNS HOPKINS UNIVERSITY

UPPER PLEISTOCENE OCCURRENCE ALONG THE OAXACA COAST OF MEXICO

THE Oaxaca coast of Mexico is a series of alternating depressions and elevations. In one of the recently elevated areas there are exposed patches of Upper Pleistocene for a distance of some twenty-eight miles. In some places the formation is exposed along the shore and in others a mile and a half inland. It forms a low cliff with an extreme elevation, where observed, of fifty! At other points it is but a few feet high and in still others it is exposed only at low tide.

For the most part the formation is a soft gray or buff sandstone, though locally it is hard and flinty. In one of the exposures there is an abundant fauna that is remarkably preserved. Many of the extremely fragile shells are entirely intact, gastropods with protoconchs are common and in many cases the colors still persist. The preservation of the forms are, almost without exception, better than that of the shells living along the coast. This preservation and the absence of any appreciable cross-bedding are indicative of tranquil shore conditions, which strongly contrasts with the present-day wave-buffeted strand.

A majority of the forms are the same as those now living along the present beach; some are not known to be living and a few show slight though constant differences from their living descendants, suggesting that evolution has been operative since Pleistocene times among the invertebrates as well as among the vertebrates.

Another fact of interest is that among this fauna there are ten or more species that are reported only from Panama and further south. This indicates that the sea was somewhat warmer than at present, which is in accord with the northern migration along the west coast that is known to have occurred during Upper Pleistocene.

R. H. PALMER
STANFORD UNIVERSITY

CONSERVATION OF OUR NATIVE CHESTNUT

IN 1924 the writer published a note[1] concerning the survival of chestnut trees in Pennsylvania, on an area in which the trees were carefully measured for new growth and blighted wood. It was found that the new growth was eighteen times that killed in the same year. Other observers, as Clute,[2] Collins,[3] Gravatt,[4] Graves[5] and Hodson,[6] have noted immunity to some degree, or recovery of portions once blighted. The bark at the base has been demonstrated (Graves, *l. c.*) to be more resistant, apparently because of a larger tannin content.

In the past summer (1925) the same plot was resurveyed and the ratio of new to old growth was

[1] Kelley, A. P., 1924, "Chestnut Trees Surviving Blight," SCIENCE, n.s. 60: 292–293.

[2] Clute, W. N., 1924, "Resistant Chestnuts," *Am. Bot.*, 30: 168–169.

[3] Collins, J. F., 1920, "Note on Resistance of Chestnut to Blight," *Phytopath.*, 10: 368–371.

[4] Gravatt, G. F., 1926, "Scouting for Blight Resistant Chestnuts," *Amer. Nut Journ.*, 24: 8.

[5] Graves, A. H., 1926, "The Present Continued Development of Basal Shoots from Blighted Chestnut Trees," SCIENCE, n.s. 63: 164–165.

[6] Hodson, E. R., 1920, "Is American Chestnut Developing Immunity to the Blight?" *Journ. Forestry*, 18: 693–700.

found to be only three to one. Observations on other areas indicated that the general average for the region was closer to five to one. This lowering of the ratio may have been due in part to the unfavorable weather conditions which prevailed over the Middle Atlantic states during the growing season of 1925, but even a ratio of three to one is encouraging.

The older trees mentioned in the previous note have continued growth and they bore a copious crop of nuts last autumn. The nuts, however, were promptly consumed by squirrels and boys of the neighborhood, and branches of some of the trees were broken by stones and brickbats thrown against them. These trees and others similar to them (for they seem to be by no means rare) should now be carefully protected from injury and given opportunity to propagate the species.

ARTHUR PIERSON KELLEY

RUTGERS UNIVERSITY

SPECIAL CHARACTERS FOR THE TYPEWRITER

I WAS much interested in reading "Special Characters for the Typewriter" as set forth by Mr. Hulse in SCIENCE for March 26.

One company (the Remington) makes special keyboards, as the medical keyboard and the mathematical keyboard.

The medical keyboard appears to be fairly well suited to the physicians. But the mathematical keyboard is not so well suited to the mathematicians. It leaves off the useful characters \$, %, ¼, ½ and ¾, in order to put on some other mathematical signs.

I think that if a successful mathematical keyboard be made with a forty-two-typebar machine, it will have two shifts, instead of one, and 126 characters instead of 84. Then it could have exponents, as well as many other useful mathematical signs. Of course, such a machine would cost more, and it would be worth more.

I think the mathematical societies should investigate this problem, and tell the typewriter companies what should be done.

AD INFINITUM

THE UNIVERSITY OF WASHINGTON AND FISHERIES RESEARCH

ON page 91 of the January 22, 1926, number of SCIENCE appeared the following note about the University of Washington, which I would like to correct.

> The University of Washington is to be an international center of the United States and Canadian fisheries research work on the Pacific Coast, according to announcement from Dean John N. Cobb, of the College of Fisheries. The International Fisheries Commission, composed of official state fisheries commissions of Pacific coast states, Alaska and British Columbia, together with the entire Canadian department of fisheries, will consolidate all work here. The university was selected especially because of its proximity to the halibut and salmon supply. Eight leading fisheries scientists will locate in Seattle, among them William S. Thompson, of the California state fisheries, and Dr. H. F. Rich, of Washington, D. C.

About a year ago a treaty was entered into by the United States and Canada looking to the conservation and control of the Halibut fisheries of the Pacific coast. The commission was organized early in the year 1925 and appointed a staff to take care of the scientific investigations. As the commission found it desirable to locate its scientific staff in Seattle, and wished to be within reach of the College of Fisheries library and laboratory facilities, the University of Washington offered to furnish quarters for them in one of the group of buildings housing the College of Fisheries.

A short time after this the various fish commissions of the states of Washington, Oregon, California, the territory of Alaska, Province of British Columbia and the Federal Fish Commissions of United States and Canada met in Seattle and organized a federation looking to better cooperation in working on the many salmon problems of the Pacific coast. Dr. H. F. Rich, of the U. S. Bureau of Fisheries, in conjunction with an executive committee, were selected to outline plans for standardizing and coordinating the work of the various commissions so far as possible. It was not the intention in the formation of this federation to have the research work done by other than the agencies heretofore operating. In other words, Canada, British Columbia and the other commissions function just the same as they always have done, the idea being merely to meet and exchange ideas looking to a more effective attack upon our salmon problems. For the same reasons as outlined above in connection with the International Fisheries Commission, Dr. Rich was also granted quarters in the same building.

Since then, at the request of the U. S. Bureau of Fisheries, the university has furnished quarters for those scientists of the bureau, who are working upon Pacific and Northwest problems and whose headquarters it has been found convenient to locate in Seattle.

JOHN N. COBB

DEAN, COLLEGE OF FISHERIES,
UNIVERSITY OF WASHINGTON

SCIENTIFIC BOOKS

Researches of the Department of Terrestrial Magnetism, Volume V.

THE Department of Terrestrial Magnetism of the Carnegie Institution of Washington, established in