AT the University of Minnesota, Associate Professors Richard M. Elliott, William S. Foster and Donald G. Paterson, of the department of psychology, have been promoted to the rank of professor. Dr. Charles Bird has been promoted to be assistant professor of psychology.

DR. ISRAEL MAIZLISH has been appointed instructor in physics at Lehigh University.

DR. H. S. RAPER, of the University of Leeds, has been appointed professor of physiology at the University of Manchester.

DR. R. J. S. MCDOWALL, lecturer in experimental physiology and experimental pharmacology at Leeds, has been appointed professor of physiology at King's College, London.

DISCUSSION AND CORRESPONDENCE

MARINE WILCOX IN MEXICO

RECENTLY, the East Coast Oil Company, S. A., under my direction, drilled a deep test on Idol Island, which is in the Tamiahua lagoon about sixty miles south of Tampico. The location was made on what we hoped was the extension of one of the producing anticlines to the south. When oil in commercial quantity was not found at expected depth, the well was continued for exploratory purposes. The samples were carefully taken and the results from their study are of great interest and we hope to publish them shortly. In this notice it is only intended to discuss a single horizon found there. The method used in examination of samples was that first developed in our laboratory at Houston and described in a paper read before the Paleontological Society at Boston in 1921. This method has now come into general use in the Gulf Coast region and is giving excellent results. It is based, primarily, on occurrence of foraminifers either as individuals or in faunules, and we find it about as reliable in use as is the case with many molluscan faunas.

In the Idol Island well the samples from 1268 to 1800 feet showed the same assemblage of forms found in surface material taken near the top of the Alazan (Jackson) beds, while those from 1800 to 2500 correspond with the forms found in the Tantoyuca or lower Alazan. At 2500 feet there was a break evidenced by both lithologic and faunal changes. Between 2500 and 4200 feet the foraminiferal fauna is entirely new so far as we are aware. Apparently, this formation in its marine foraminiferal phase does not outcrop at the surface in Mexico. At about 4200 feet there was another change of material as the drill entered the Papagallos, and this carried the very characteristic fauna which we have been able to recognize in every sample of surface outcrop of this formation which we have had opportunity to study.

We had, therefore, in this well about 1700 feet of Eocene material between the known Jackson and known Cretaceous, the exact correlation of which we were unable to make other than that it was probably the coastal representative of some part of the Chicontopec of the interior region.

Within the last few days a series of samples has been received from a well in southern Angelina County, about one hundred miles north of Houston. The section as shown by these samples is almost entirely marine and generally highly fossiliferous.

The samples began at 930 feet. From that depth to 1127 the fauna is typically Jackson. There was then a break in samples to 2631 feet, below which the fauna was Claiborne in age. At 2800 feet the Queen City beds were found as non-fossiliferous sand 200 feet in thickness. The sample from 3003 feet was a core, highly fossiliferous. The foram fauna, which is abundant, contains only a single species found in the Claiborne, the remaining forms being absolutely different from those of that stage and from the Midway fauna, of which we have at least 100 collections. It is undoubtedly Wilcox in age. While the surface exposures of Wilcox are often fossiliferous, we know of none in which forams have heretofore been found. It is certainly the first discovery of such beds in Texas, and is of especial interest to us also in the fact that this fauna is practically identical with the one in the Idol Island well between 2500 and 4200 feet and especially with the forms below 3500 feet. The Texas fauna is more varied in genera and species, doubtless because it is a near-shore phase, while that of Mexico was laid down in deeper water. However, the dominant forms are the same in both and are not known in other formations in this region so far as we are aware.

A report on the geology of the Idol Island well is in preparation, which will give the details of which this is a brief summary.

E. T. DUMBLE

HOUSTON, TEXAS

BEHAVIOR OF THE THRESHER SHARK

NONE of the literature within my reach gives definite information as to the use of the extremely long, slender tail of the thresher shark (*Alopias vulpes*), although several writers refer to the general notion that it is used to frighten schools of fish in order to make them huddle close together. For that reason it seems to me that many non-specialists among readers of SCIENCE may be as much interested as specialists in a record of a recent observation near the end of

the pier belonging to the Scripps Institution at La Jolla. This point is about 1,000 feet from shore and the water is near thirty feet deep.

While taking my plankton collection at about 7:25 a. m., April 14, 1923, I heard a splash near by. Turning, I saw about one hundred feet distant a swirl in the water like that made by a California sea lion. A moment later a long, slender, compressed tail (about three feet long) flashed above the surface and lashed about like a coach whip. It evidently belonged to some shark-like creature with which I was not acquainted. This exhibit was quickly repeated once. The body was not visible at all.

At about 7:45, while draining some water through my filtration net I saw about fifty feet from the pier what appeared *at first* to be a "soup fin shark" (*Galcus zyopterus*). It was coming diagonally toward the surface and swimming rapidly. Almost immediately I noticed a small fish (possibly California smelt, *Atherinopsis californicus*, about ten inches long) frantically swimming just in front. A moment later the pursuer, a six-foot thresher shark, passed partly ahead of the victim (probably half its own length) when it turned quickly and gave the coach-whip lash with the tail which I had seen before. The victim was much confused, if not actually injured by the whiplike movement, which seemed to be very accurately aimed. The whip stroke was instantly repeated with very confusing speed, and it then became evident that the victim was seriously injured. It was, however, almost under the drip from my net, at which the shark was apparently frightened. The shark darted away and was not seen again. The victim sank, swimming feebly, then came to the surface and lay on its side awhile. Then it struggled feebly with head at surface, gasping. Finally it sank again until out of sight and was not seen again.

I was much impressed with the speed and skill with which the shark worked and with the accuracy shown in its strokes at a single flying target.

W. E. ALLEN

LA JOLLA, CALIFORNIA

ASYMMETRICAL ORATORY

IN the work of supervising class-room teachers during many years and in visiting class rooms in different parts of the country, I have frequently noted phenomena analogous to those described by Dr. W. Gilman Thompson (SCIENCE, March 16, 1923) as "right- and left-handedness in speakers."

Many teachers, especially when the class is large, focus their service upon a limited portion of the room to the almost complete neglect of the pupils in the marginal fringe. Whenever I brought this fact to the attention of teachers, I found that they were themselves unaware of it. On the other hand, I have met teachers who were aware of this tendency in themselves, and who attempted to counteract it by means of some mechanical device, such as seating plan or roll book, etc., to insure an equitable distribution of attention to all individuals.

The use of the right or left hand and arm to release the emotional strain for which the voice alone is not an adequate outlet may account for the asymmetrical presentation in the case of public speakers and orators. From my observation in schools I am inclined to attribute the limitation to some irregularity of vision. In many cases it is possible to detect deficient vision on the part of pupils by their posture and address.

This matter deserves more intensive and systematic study, both for the improvement of school-room technique and for the art of public speaking.

BENJ. C. GRUENBERG

NEW YORK

QUOTATIONS

MEDICAL PROGRESS

"EMOTIONAL tension," Sir Almroth Wright declared in a recent lecture on vaccination, "is intolerant of any intellectual *impasse*." He was describing in outline the steps by which modern medicine has progressed towards a clearer knowledge of disease and of the mechanism of the body's protection against disease. Hypotheses are always tentative; of the best of them it may be said that, in a sense, they are made to be broken. Thus it was "'the pain in the mind,' which is felt when one is appealed to and is powerless," to quote Sir Almroth again, which led Pasteur to revise his first theory of vaccination and so to achieve his great triumph over hydrophobia. Last week, at St. Mary's Hospital, Professor Dreyer, of Oxford, offered yet another extension of knowledge which is the outcome of revised opinions and changed ideas. His new treatment of tuberculosis, whether ultimately it stands or falls, is the last link in a chain extending back to Jenner. The chain is continuous, but its links are not, if the metaphor may be extended, of the same shape nor even of the same metal. In a series of monographs, of which we present some account to-day, Sir Almroth Wright has recently outlined his own revised opinions on the subject of vaccination against disease. These differ in many important respects from the views this pioneer held when he set himself to perfect the method of preventive inoculation against typhoid fever, which stood the world in so great stead during the years of the war. Sir Almroth no longer believes that our bodies elaborate a special and specific antidote against each germ which attacks them. Rather he takes the view that there is stored up in the white cells of the blood