H. F. Johnstone, Ph.D. (Iowa, '26), has been appointed assistant professor in the same department.

AT the Rice Institute, A. C. Chandler, Ph.D. (California), head of the department of helminthology at the Calcutta School of Tropical Medicine, has been elected professor of biology; Szolen Mandelbrojt, D.Sc. (Paris), has been appointed to a lectureship in mathematics, and C. F. Arrowood, Ph.D. (Chicago), A. D. Garrison, Ph.D. (Rice), and L. B. Ryon, C.E. (Lehigh), have been promoted to assistant professorships in education, physical chemistry and civil engineering, respectively.

IN the school of medicine at the University of Texas, Dr. Henry C. Hartman began his work as dean at the opening of the fall term. Dr. Charles T. Stone, after a year's study abroad, has taken up the professorship of medicine. Dr. Titus H. Harris will be in charge of the new department of mental and nervous diseases. Dr. John K. Glen becomes professor of anatomy, Dr. Meyer Bodansky, associate professor of biological chemistry and Dr. Paul Brindley, adjunct professor in pathology.

AMONG the deans of faculties elected by the University of London for the period 1926–28 are the following: Medicine, Sir Cuthbert Wallace (St. Thomas's Hospital Medical School); science, Professor L. N. G. Filon (University College); engineering, Professor E. H. Lamb (East London College).

DR. MAURICE ROCH, professor of clinical medicine, has been appointed dean of the medical faculty at Geneva.

PROFESSOR TRENDELENBURG, of Freiburg, has received a call to the chair of pharmacology at the University of Berlin as the successor to Professor Heffter.

DISCUSSION AND CORRESPONDENCE

MIGRATION OF BONITOS OR VICTOR-FISH IN THE NORTH PACIFIC

THE most abundant fish in the open waters of the Pacific is the oceanic bonito, *Katsowonus vagans*. This is known to the Japanese as Katsuwo or Victor fish and in Hawaii as the aku. It is a mackerel-like fish, ranging in length to about three feet, and its red flesh is now very extensively canned as "tuna" along with other fishes of similar character.

I learned in Honolulu, on good authority, that a school of these fishes ninety-six miles in length had once been noticed passing Hawaii. I had occasion to discuss this with a business man who frequently went from San Francisco to Hawaii, Mr. A. C. Lovekin, and he gave me a similar account of an experience of his own. I am sending this for publication, for I am sure that the matter is one of interest to many naturalists. With the Victor fish which Mr. Lovekin calls Bonito there were a considerable number of tuna (Thunnus) and other large fishes and they were easily caught with improvised harpoons. In Honolulu the aku is generally obtained by securing numbers of small fishes, particularly anchovies and throwing them into the water. The aku pick them up. They are then taken on a hook and cut into pieces to be used as bait for tuna and other large fishes.

DAVID STARR JORDAN
STANFORD UNIVERSITY

DURING the months of July and August, 1893, I made a voyage from Honolulu to San Francisco on the bark "Andrew Welch," Captain Drew, and observed what to me was an interesting thing in the life of two of our North Pacific fishes.

It was a period of light winds and our ship was drifting with a headway of but a few knots an hour some hundreds of miles almost due north of Hawaii and about in the latitude of San Francisco. Upon coming on deck one morning we found that we were surrounded by a school of tuna and bonitos.

There seemed to be no limit to their number and far as we could see on all sides the ocean was packed with fish. I observed them for the ten or more days that they accompanied us, noting that they appeared to have arranged themselves in uniform ranks in swimming and kept their individual position continuously, adopting our vessel as guardian and guide, always following the same course as taken by the ship. They apparently were not feeding, although I caught many of the smaller bonito using a bit of white rag attached to a common fishhook and harpooned and landed a few of the larger tuna, some of which weighed up to eighty pounds.

Captain Drew, who had been in the sailing vessel service between San Francisco and Hawaii for over twenty years, assured me that he had not observed a similar migration on any of his former voyages and all the sailors on board assured me it was the first time they had seen anything of the kind.

The school accompanied the ship for some ten or more days and it was only after a strong breeze had given our vessel good headway that we finally parted company with our finny friends.

A. C. LOVEKIN
RIVERSIDE, CALIFORNIA

BOVERI ON CANCER

THE article in SCIENCE for October 1 on "The Present State of Scientific Knowledge of Cancer" is illuminating as to the state of ignorance by physicians of the nature of cancer. Boveri's studies of

double fertilized sea-urchin eggs established the probability that human and other animal cancer is essentially a distortion of the numerical relations of the chromosomes in the cells. But, so far as I have been able to learn by extensive inquiry extending over fifteen years, no American physician knows of these most fundamental studies ever made upon cancer. A realization of the nature of the disease seems a natural prerequisite to the most worthy study of its causes and cure.

To be sure, few physicians are trained cytologists, but there must be some who are sufficiently trained to read Boveri's papers with understanding. Probably also no American physician has the cytological skill to continue Boveri's studies, but if the directors of cancer research were informed as to the foundation Boveri has laid for an understanding of this disease they might be able to secure aid from cytologists competent for this work, though this would by no means be easy. The technique in this most intimate field is forbiddingly difficult. But, however difficult further research may be, there is no adequate excuse for ignorance of this the most illuminating work ever done upon cancer. No one can study the subject intelligently unless fully cognizant of Boveri's studies.

MAYNARD M. METCALF
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A PERIDERMIUM NEW TO THE NORTHEASTERN UNITED STATES

DURING the first week of June, 1925, the writer discovered a gall-forming Peridermium on *Pinus sylvestris,* Scotch pine, bordering Round Lake near Woodgate, New York.

The Scotch pine is in plantations which were established by a Mr. R. Dallarmi, a Bavarian, who acquired the land in 1856. He cleared most of the ground, which had been lumbered and devastated by fire for the growing of farm crops. The topography of the land is gently rolling and the soil is a very light sandy loam. Some of the ridges and knolls are almost pure sand, and when they became too poor for farming they were reforested by the broadcasting of seed of *Pinus sylvestris, Pinus strobus* and *Picea excelsa. Pinus sylvestris,* with one or two exceptions, predominates. It is the only species present in some of the plantations.

Mr. Dallarmi imported the seed from Germany. Small plantings of seedlings of *Pinus sylvestris, P. Austriaca, P. strobus,* and *Picea excelsa* which he grew from seed were made around the home grounds and a small cemetery in 1870. Plantations were established by sowings of seed in '74, '79, '80 and '83. He kept careful records of all the crops and there seems to be no mention of any seedling forest trees other than the ones which he grew from seeds being planted on his estate. A daughter, Miss Mary W. Dallarmi, and former neighbors who knew Mr. Dallarmi for many years prior to his death in 1913, claim that no trees from any outside source were brought to his farm. The source of the infection at Woodgate is as yet entirely unknown.

In June and August of 1925, the writer made careful searches for alternate hosts of the Peridermium, but none were found. Very thorough scoutings have been made the present season by various workers for such plants. To date, October 4, 1926, no uredinial and telial stages have been discovered. This Peridermium is undoubtedly autoecious at Woodgate, N. Y.

The galls of this Peridermium are quite similar in shape to those of *Cronartium cerebrum* (Peck) Hedgc. and Long. But the aecia of the Woodgate peridermium are not cerebroid. Furthermore, there are no oaks, the alternate hosts of *C. cerebrum,* within ten miles of Woodgate. There is a striking resemblance between the galls of the Peridermium occurring at Woodgate and the illustrations of *Peridermium giganteum* (Mayr) Tub. which occurs on *Pinus densiflora* in Japan, but this rust is apparently heteroecious.

It is not known whether the Woodgate Peridermium will attack other hard pines. With the exception of probably a dozen *Pinus austriaca* and a few hundred *Pinus resinosa* which have been planted in recent years, there are no other hard pines in the Woodgate region. As yet the *Pinus austriaca* and *P. resinosa* do not seem to be attacked by the Peridermium. There are about fifteen acres reforested on the Dallarmi estate, which is now owned by the Masonic Lodge of New York. Natural seeding of *Pinus sylvestris* has resulted quite freely, the trees ranging from one to twenty or more years of age. The Peridermium is distributed throughout the planted and natural seeded areas. It is also known to have spread into plantations of *Pinus sylvestris,* one hundred and ten miles distant from the Round Lake infection.

The Conservation Commission and the Office of Forest Pathology in the U. S. Department of Agriculture are cooperating on an intensive study of the Peridermium at Woodgate. Some of the results of this work to date are: This Peridermium has been at Woodgate for at least thirty years. The amount of infection has increased rather rapidly since 1920. Infection apparently takes place on the current season's wood and through the epidermis of the twigs and stems. Infections may occur on the axis where the staminate cones are borne. In 1926 the aecia began to appear about the middle of May. The climax of aecia production occurred the first week in June. Viable spores were found in a canker August 21, 1926. In the majority of cases the cankers bear their