Writings of John Hughlings Jackson," edited by James Taylor, will be presented to the lecturer.

BRIGADIER HUGH W. B. CAIRNS, Nuffield professor of surgery at the University of Oxford and consultant in neurologic surgery to the Royal Army Medical Corps, delivered the Charles H. Mayo Lecture in Surgery of Northwestern University on April 20. His subject was "The Treatment of War Wounds of the Head."

THE Edward K. Dunham Lectures for the promotion of the medical sciences of Harvard University will be given by Dr. Vincent B. Wigglesworth, F.R.S., director of the Agricultural Research Council Unit of Insect Physiology of the London School of Hygiene and Tropical Medicine. His subject will be "The Insect as a Medium for the Study of Physiology." The lectures will be given at five o'clock at the Harvard Medical School on May 7, 9 and 11.

PROFESSOR HARLEY J. VAN CLEAVE, of the University of Illinois, on April 14 addressed the Illinois Dietetics Association in Chicago on "Diseases which Might Become Abundant after the War."

THE Firestone Tire and Rubber Company, Akron, Ohio, plans to open soon its new laboratory, which has been built at a cost of $2,000,000. A preview has been arranged for the American Institute of Chemists.

THE James F. Lincoln Arc Welding Foundation is offering awards amounting to $20,000 to encourage the preparation and publication of text-books, one on modern machine design and a second on structural design by all processes, including welding, for the instruction and study of undergraduates in engineering. In each class there are offered first, second and third awards of $5,000, $3,000 and $2,000, respectively. Manuscripts should be sent by registered mail or insured express not later than May 15, 1946, to the Secretary of The James F. Lincoln Arc Welding Foundation, Cleveland 1, Ohio, from whom further information can be obtained.

THE Westinghouse Educational Foundation has provided three fellowships in electron optics at the Ohio State University—one post-doctoral fellowship with a stipend of $3,000 per year and two pre-doctoral fellowships with stipends of $1,000 per year. These fellowships are open to graduates in physics, mathematics and electrical engineering. Application forms may be secured from the Dean of the Graduate School of The Ohio State University, Columbus.

THE Francis Shimer College, Mount Carroll, has received a bequest from the late Dr. Blanche M. Haines of $20,000 to set up the George R. Moore Memorial Fund to be used to improve and promote the teaching of sciences.

DISCUSSION

FOURTH OUTBURST OF NOVA (T) PYXIDIS

DR. ALFRED H. JOY, astronomer at the Mount Wilson Observatory at Pasadena, Calif., has found that the recurrent nova, T Pyxidis, is again increasing in light. This makes the fourth rise to maximum in the past fifty-five years; in 1890, 1902, 1920 and 1945. On the first three occasions the nova attained the seventh magnitude, an increase of seven magnitudes from normal minimum brightness. Dr. Joy reports that by April 3 the nova had increased three magnitudes on the present rise to maximum.

There are not many recurrent novae known. Nova (RS) Ophiuchi has had two outbursts, in 1898 and 1933, while Nova (U) Scorpii has had three outbursts, in 1863, 1906 and 1936.

Dr. Joy finds the background (continuous) spectrum of Nova Pyxidis to be weak, with strong, bright bands and lines projected upon the background—a condition that generally prevails for novae.

Nova Pyxidis has been on the observing list of variable star observers for the past twenty years, in the hope that some observer might catch it on the rise to maximum. For northern observers, the star is unfavorably placed for observation—thirty degrees below the celestial equator. It is of about magnitude fourteen at minimum and thus is a very difficult star to watch. Observers should now follow the nova closely, not only to study its light variations, but also its spectral changes.

LEON CAMPBELL

THE CONCEPT OF A "STRAIN" IN BACTERIOLOGY

IN most fields of biology "strain" refers to a genetically distinct group within a variety or within a larger biological group when that group has no subdivisions. The problem is more complex in bacteriology. Because of the strong dissociative tendency among many bacteria which tends to produce distinctly different daughter races from apparently homogeneous parent cultures, transplants of such colonies are frequently considered as separate "strains." However, they are more correctly "dissociants," using the term in its broader sense "having properties different from those of the parent culture" rather than in the earlier meaning, which was based on smooth-rough differences. When such dissociants

have been cultivated for some time they may still produce further dissociants, even when single cell isolations are used and it is, therefore, simpler to refer to them as "cultures" or "growths" rather than as "strains."

Likewise, when a culture from, *e.g.*, the pharynx is plated so as to obtain discrete colonies, it is difficult to determine by simple methods whether or not the different colonies in each group of bacteria are genetically similar. Therefore, the appellation "culture" for such individual colonies is again preferable to "strain" which should be reserved for those offspring of a single "pure" culture or better still, of a single cell. Conversely, microorganisms that differ in certain biochemical properties may not necessarily be different "strains," and they should only be considered as such when it is known that they are genetically unrelated.

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SLEEP-ELECTRO-SHOCK THERAPY

IN the course of treatment of depressed patients with electro-shock therapy, two complications have occasionally arisen which have proved quite disturbing. One is the reaction of fear gradually built up in some patients as treatments are repeated. Such patients frequently refuse to continue with the treatment and are thus unable to benefit from a course of therapy which by now is recognized as being definitely helpful in such cases.[1] The other complication appears in the form of psychomotor excitability as manifested by excitement, agitation, restlessness, shouting and combativeness in patients following the orthodox electro-shock treatment. The importance of quieting such patients arises from the fact that unless forced restraint is applied these patients can damage either themselves or those in their immediate environment.

It has recently been found that both of these complications may be forestalled by the utilization of a sleep-electro-shock therapy.

This consists in the preliminary administration of an intravenous injection of an aqueous solution of pentothal-sodium in a dosage sufficient to produce sleep. The type of administration will vary with the patient. If, for example, one wishes to elicit psychogenic material during the process by the method of narco-analysis[2] a 2.5 per cent. solution is injected at a rate of 1 cc per minute. As the patient becomes drowsy, questioning can be carried on and responses noted. In other patients the injection may be made more rapidly—when 5–7 cc of a 5 per cent. solution induces prompt sleep.

While asleep, the electrodes may be applied to the patient and one of two indicators may be used as the propitious moment for applying the current. In a deeper stage of sleep the patient remains motionless. The corneal reflex is tested. When its response is noted the application of current which by the orthodox method was found to be a convulsive dose will result in a minor (non-convulsive) reaction. If, on the other hand, the current is not applied until the patient shows his first spontaneous movement then this same dosage-results in a major (convulsive) reaction.

In either case the patient awakens in a calm manner and remains quite docile and friendly.

By means of this sleep-electro-shock therapy patients who would otherwise have remained untreated have continued to take treatment.[2, 3] It is hoped that others beset with the same difficulties will also find this method helpful.

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EARLY CENOZOIC FACIES IN THE ROCKY MOUNTAIN REGION

STUDIES of early Cenozoic deposits in the Rocky Mountain region reveal evidence of distinctive faunal and sedimentary facies.

Paleocene and Early Eocene assemblages of fossil mammals include members of two different faunal facies. Almost all the collections from drab Paleocene formations and a few from gray layers in red-banded Paleocene and Early Eocene deposits have been found concentrated in small "pockets" or "quarries." These faunas are composed chiefly of diminutive multituberculates, marsupials, insectivores, primates and rodents that were members of an arboreal forest community. Most of the fossils from the red-banded sediments, on the contrary, have been found scattered throughout the matrix, and these are the remains of larger terrestrial forms—"subungulates," condylarths, creodonts, artiodactyls and perissodactyls —mammals that probably lived in a savannah environment.

The consistent association of a forest fauna with drab deposits and of savannah dwellers with red-

[1] N. D. C. Lewis, H. C. Solomon and H. E. Bennett, *Amer. Jour. Psychiat.*, 101: 267, 1944.

[2] H. S. Rubinstein, "The Fear-Allaying Effect of Pentothal-Sodium in Electro-Shock Therapy." Ready for publication.

[3] H. S. Rubinstein, "The Use of Pentothal-Sodium as a Psychomotor Depressant in Electro-Shock Therapy." Ready for publication.