of the sex-glands to changes of light—the factors directly concerned in causing the changes observed by Professors Rowan and Bissonnette.

T. HUME BISSONNETTE
LABORATORY OF ANIMAL NUTRITION,
SCHOOL OF AGRICULTURE,
CAMBRIDGE, ENGLAND

PROFESSOR TROLAND AND DR. KUNZ

THE multifarious activities of such men as Professor Leonard Thompson Troland and Dr. George F. Kunz, both of whom died during the early part of this summer, makes it impossible for a biographical note to refer to all their widely scattered activities. Perhaps you can find space for this brief additional tribute.

Dr. Troland published several important papers on the nature of life and life processes, *viz.*: "The Chemical Origin and Regulation of Life," *Monist,* January, 1914; "The Enzyme Theory of Life," *Cleveland Medical Journal,* 15, 377–389 (1916); "Biological Enigmas and the Theory of Enzyme Action," *Am. Naturalist,* 51, 321–350 (1917). Extensive quotations from these papers are given in a paper by Alexander and Bridges in "Colloid Chemistry, Theoretical and Applied," Vol. II (Biology and Medicine), pp. 18–21. These papers of Troland are well worth the consideration of all biologists.

Dr. Kunz, among his many other social and scientific activities, was deeply interested in chemistry, and at the time of his death was president of the American section of the Société de Chimie Industrielle. He had long been collecting for the American Museum of Natural History specimens of the known chemical elements, and had himself contributed to the nearly complete collection many specimens of historic interest, *e.g.,* part of the rare atmospheric gases first isolated by Sir William Ramsay. On June 28, the day before his death, Dr. Kunz discussed with me matters concerning the American section, and evinced a keen interest in current scientific matters and affairs.

JEROME ALEXANDER

SOME NEW AGAR DIGESTING BACTERIA

DURING the course of some studies on the bacteria responsible for changes brought about in an experimental trickling filter receiving a creamery waste, a number of organisms were encountered which were distinctive in that they digested the agar medium upon which they were grown. A study of these cultures was undertaken in hopes that it might throw some light upon their rôle in the purification process, as well as upon their ability to digest agar.

These cultures were divided into three distinct groups, and since a survey of the literature showed that they had not been previously described, they are therefore described as new species.

Achromobacter pastinator nov. sp: gram negative, non-spore-forming, short rod; motile by means of peritrichous flagella. Colonies small, almost colorless and producing definite liquefaction of agar media. The colonies sink into cup-like depressions in the agar. Acidity is not produced from carbohydrates, although many such compounds are utilized as carbon sources, as shown by chemical analyses.

Pseudomonas lacunogenes nov. sp: gram negative, non-spore-forming, short rod; motile by means of a single polar flagellum. Colonies orange yellow, slightly raised, smooth, butyrous and causing slight depressions in the surface of agar media. No definite liquefaction takes place, although the agar is softened. Acid is rarely produced from carbohydrates, although chemical analyses indicate that many of these compounds are utilized. This organism also utilizes such nitrogen compounds as cystein, asparagin, aspartic acid, tyrosine, alanine, glutaminic acid, ammonium succinate and peptone as sources of both carbon and nitrogen. It also utilizes ammonium sulphate, ammonium chloride and ammonium phosphate as sources of nitrogen, when dextrose is present.

Pseudomonas segne nov. sp: gram negative, non-spore-forming, short rod; motile by means of a single polar flagellum. Colonies orange yellow, slightly raised, smooth, butyrous and causing slight depressions in the surface of agar media. No definite liquefaction takes place, although the agar is softened.

The action of this organism on carbohydrates is identical with that of *Ps. lacunogenes.* There is, however, a marked difference between these two organisms in their ability to utilize nitrogen compounds, *Ps. segne* being unable to utilize any of the nitrogen compounds listed under *Ps.* lacunogenes as a nitrogen source except peptone.

A full description of the morphology and physiology of these organisms will be published elsewhere.

HARRY E. GORESLINE
IOWA STATE COLLEGE

A NEW YELLOW PEROMYSCUS

THE discovery of a new coat color mutation in mammals is sufficiently uncommon to justify its announcement as a special event. We take some pride, therefore, even if we deserve little credit for the production, in making public the discovery of a new dilute yellow (or dilute brown) *Peromyscus.*

The mouse appeared first as a segregant, in a litter of four, in a stock of *Peromyscus maniculatus gambeli,* which was being used in a joint genetic investigation of white spotting in this species. Subsequently, three other similar yellows appeared, all of them

being traceable to a male individual trapped at Silver Lake, Oregon. Since we thus have four yellows, in a total of sixteen young, it appears probable that the character is a simple recessive for which the male in question happened to be heterozygous.

The oldest mouse is now in post-juvenile pelage and appears, in color, to occupy a position between Sumner's yellow and pallid *Peromyscus* and to be comparable with dilute brown agouti *Mus*. The pattern of the individual hairs of the segregant is the same as that in wild mice, but the individual dark pigment granules are brown rather than black. A reduction in the intensity of the black pigment is noticeable also in the normally pigmented portions of the skin. The eyes are less protruding than in wild *Peromyscus*, are quite sensitive to light and appear slightly reddish when well illuminated. The new yellow mice appear to grow as rapidly and to be as vigorous as their normally colored sibs.

R. R. HUESTIS
ELIZABETH BARTO

UNIVERSITY OF OREGON

SCIENTIFIC BOOKS

A Study of the Solar Chromosphere. By DONALD H. MENZEL, with an introduction by W. W. CAMPBELL. Publications of the Lick Observatory, Volume xvii, Part I, 1931.

DR. W. W. CAMPBELL'S photographs of the flash spectrum, made at Lick Observatory expeditions to solar eclipses in 1898, 1900, 1905 and 1908, form the observational sources for Dr. Menzel's study. In a brief introduction the director emeritus of the Lick Observatory and former president of the University of California discusses the "moving-plate" method of recording the flash spectrum, which he invented and effectively used at these eclipses. Pressure of administrative duties compelled him reluctantly to postpone and finally to relinquish the discussion of his flash spectrograms—but the course of research runs so much more smoothly than the conduct of administration that transformations of able research men into able administrators tend not only to restore the social balance but also to advance the ultimate security of research.

Dr. Campbell's "moving-plate" method of observing the flash will remain a primary contribution to eclipse technique. The interpretation of his splendid spectrograms has profited by the delay in discussion, thanks to intervening development of atomic theory; and in Dr. D. H. Menzel he has found a most competent investigator, who has carried the work to completion.

In mid-afternoon of August thirty-first, when the moon's shadow skimmed during twenty-five minutes southeastward from James Bay across Cape Cod, eclipse expeditions, carefully placed along its narrow and unfortunately not wholly unclouded track, attempted again to photograph the instantaneous or "flash" spectrum of the sun's upper atmosphere or "chromosphere." The flash spectrum was briefly seen just at the beginning, and again just at the end of totality, when the chromosphere was visible as a narrow bright changing crescent while the glaring lower photosphere conveniently was hidden behind the edge of the opaque moving moon. The spectrum of this bright crescent, first observed by Young in 1870, has been photographed at every visible eclipse since 1896. Complete success in recording it is very difficult of attainment. Among many attempts, the most notable spectrograms have been secured by Mitchell (Spain, 1905), by Campbell (at the same eclipse), and by Pannekoek and Minnaert (1927).

In the usual "fixed-plate" method of taking flash spectrograms the time-coordinate for the chromosphere's changing crescent is suppressed; the thinness of this uneclipsed crescent after the photosphere is hidden renders a slit unnecessary, and in the direction of dispersion a series of bright parallel arcs represents the composition with respect to wavelength of the light from the upper solar atmosphere. In Campbell's "moving-plate" instrument the time-coordinate is made explicit at the cost of restricting the photograph to the short central sections of these arcs. This is accomplished by placing a long narrow aperture running in the direction of dispersion immediately in front of the photographic plate, and by uniformly moving the plate during the exposure, in its own plane behind the long aperture, at right angles to the direction of dispersion. In the fixed plate spectrograms the lengths of the bright arcs indicate the minimum heights to which the corresponding elements extend above some zero level approximating the level of the photosphere. In the moving plate spectrograms the arcs obviously are replaced by parallel straight lines. The changing intensities of these lines in the direction of motion of the plate yield a multiplicity of interesting data not otherwise revealed. For example, the rare earth lines, and, again, enhanced lines due to ionized atoms, can be picked out by their characteristic appearances—they remain bright well inside the sun's limb, where other lines show as dark against the continuous spectrum of the photosphere. These features are well shown