early stage of shell-building which precedes the adult idiomorphology and may or may not be distinct from the proloculum. Such early or youthful stages are clearly defined in certain Peneroplidae and megalospheric orbitoids and are more or less distinct in the Fusulinidae, mentioning only some outstanding examples.

The term "embryonic apparatus" is moderately favored among some specialists on the orbitoids, but it is inappropriate and misleading for several reasons. The stage represented can hardly be considered embryonic, even if, by far-fetched and loose analogy, the term "embryonic" can be applied to any phase of protozoan life history. To call the shell or a part of the shell an "apparatus" strains a point in lexicography.

"Nucleoconch" is another name that has been used for this stage by a few writers during recent years. This term is rather awkward and lacks euphony. It is appropriate only in the singular sense that the "nucleoconch" is a sort of nucleus for the adult shell structure, but in other respects the term is misleading because its literal and obvious meaning (*i.e.,* shell for the nucleus) does not harmonize with the peculiar usage which has been defined for it. A further and important objection is that the term has not generally been accepted.

It seems opportune, therefore, to propose a new term. *Juvenarium* appears to fulfil our requirements. This word, of Latin origin, is composed of the stem JUVEN-, *youth,* plus the suffix -ARIUM, *place of* a thing. It is intended that the term shall have a general or broad application to a stage of shell-building rather than a specific or precise reference to a particular stage in the life history of the animal. This caution is prompted by the fact that the very little which is known about the life history of such foraminifers as the Fusulinidae and Orbitoididae is based on analogy with the inadequately understood life history of more or less distantly related, modern forms. Furthermore, it is not at all improbable that the stages of shell-building in different families bear different relationships to the events of individual growth; accordingly, analogies of this sort are precarious.

LLOYD G. HENBEST

U. S. GEOLOGICAL SURVEY

SOME NOTES ON NORTH AMERICAN CRAYFISH

No information apparently exists regarding the depths to which crayfish may live in lakes. A recent collection has been turned over to the writer with some interesting data pertaining to this question. Two female crayfish of the species *Faxonius virilis* (Hagen) were obtained by Hilary J. Deason, of the U. S. Bureau of Fisheries, from nets set in Green Bay of Lake Michigan (Lat. 45° 34.2′ N.–Long. 87° 2.8′ W.). These nets were set in 18 fathoms (104 feet) and were lifted on May 21, 1932. Mr. Deason states that crayfish are frequently obtained in this region from nets set in deep water. From an economic standpoint the occurrence of crayfish at these depths is interesting. These animals are a potential food supply and doubtless could be reared or now occur over the entire bottoms of some of the Great Lakes.

In SCIENCE for August 30, 1929, a note appeared by Curtis L. Newcombe regarding a blue crayfish. The specimen referred to in this account was an immature, second form male, and was assigned to the species *Cambarus carolinus dubius* Faxon. I have examined this specimen, and it probably is referable to *Cambarus monongalensis* Ortmann, which is normally blue.

Several blue specimens of crayfish have come to the attention of the writer. Blue specimens have been seen of the normally brown or greenish *Faxonius immunis* (Hagen), *Faxonius propinquus* (Girard) and *Cambarus robustus* Girard. A specimen of *F. propinquus* kept alive in an aquarium underwent several moultings with the blue color persisting. Recently red specimens of *C. robustus* have been obtained from a rearing pond near Grand Rapids. These red specimens (one of each sex) are alive and attempts are now being made to mate them. Probably the red and blue crayfish represent mutations.

In the mountains of the Carolinas, West Virginia and Pennsylvania two closely related burrowing species of crayfish are found. One, *C. monongalensis* Ortmann, is blue, the other, *C. carolinus* Erichson, is red. From morphological characters alone it is practically impossible to distinguish the two species. The suggestion arises that these colored crayfish species may have had their origin by mutation. It appears to me that mutant color characters would be best perpetuated in burrowing species. Such species would have limited mating possibilities and color would have little effect regarding survival.

EDWIN P. CREASER

UNIVERSITY OF MICHIGAN

THE EXISTENCE OF A MONTHLY SEX CYCLE IN THE HUMAN MALE

IN a study regarding the total daily urinary excretion of gonad-stimulating substances in normal individuals and in mental patients, two adult male subjects (one normal and one psychotic), included in this study, showed a sudden excretion of such substances

at approximately monthly intervals. This gonad-stimulating material produced mostly follicular stimulation in the immature rat which was similar to the reaction obtained with material from the urine of human females at certain phases of their menstrual cycle and also during menopause.

Our studies in the male, which are being continued, would seem to lend further support, from the hormonal standpoint, to the view that a monthly sex cycle exists in the human male.

The investigation is being extended to ascertain the possible correlation of the findings with the mental state and other clinical manifestations.

The work is being aided, in part, by a grant from the Thomas W. Salmon Memorial Fund of the New York Academy of Medicine.

MEYER M. HARRIS
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NEW YORK STATE PSYCHIATRIC INSTITUTE AND HOSPITAL

REPORTS

MILTON AND CLARK AWARDS

AWARDS amounting to $36,290 have been assigned from the Milton and Clark funds to members of the teaching and research staff of Harvard University in order that they may carry on study in fields in which they are interested. The names of the recipients of those awards which concern the sciences and the subjects of the proposed research are here given:

Ralph Beatley, associate professor of education, to defray the cost of an experimental edition of a school text in demonstrative geometry.

Charles L. Bickel, instructor in chemistry, to study the action of organic magnesium compounds on oxido ketones and their oximes.

Marland P. Billings, assistant professor of geology, for a study of the geology of the Franconia, Mt. Cube and Woodsville quadrangles.

Bartholomeus J. Bok, assistant professor of astronomy, to analyze star-counts.

Charles F. Brooks, director of the Blue Hill Observatory, to investigate solar radiation.

Frank M. Carpenter, assistant curator of invertebrate paleontology, to collect fossil insects at Creede, Colo.

Arthur Casagrande, lecturer on soil mechanics, to study the action of frost in soils, rocks and building materials.

Randolph W. Chapman, assistant in geology, and F. S. Miller, research assistant, to study contact metamorphism in the southern Sierra Nevadas and adjoining regions.

Harold J. Coolidge, Jr., assistant curator of mammals, to make observations on skin color and pigmentation in chimpanzees of various ages, at the Yale Anthropoid Station, Orange Park, Fla.

Franzo H. Crawford, assistant professor of physics, to study the absorption of polyatomic gases in regions below the absorption limit of atmospheric air.

Philip J. Darlington, Jr., assistant curator of insects, to collect insects in Santo Domingo and to study their distribution, leading to a study of the zoogeography of the Caribbean region.

Jacob P. Den Hartog, assistant professor of applied mechanics, to study dynamic instabilities caused by the flow of air.

Merritt L. Fernald, professor of natural history, to illustrate the technical details of critical or newly studied plants and to make clear, by mapping, their geographic affinities.

Paul R. Gast, assistant professor of forestry, to determine the effect of varied radiation intensity on the growth rate of trees.

Russell Gibson, assistant professor of economic geology, to continue field investigation of the regional geology, igneous geology and mineral resources in northwestern Montana.

Charles H. Greene, instructor in chemistry, to study the rate of precipitation of silver chloride.

Chester S. Keefer, assistant professor of medicine, to determine the immune processes concerned in the recovery from gonococcal arthritis.

Edwin C. Kemble, professor of physics, to continue the theoretical study of the properties of atoms and molecules.

Theodore Lyman, director of the Jefferson Physical Laboratory, and J. C. Street, instructor in physics, for an investigation of cosmic rays.

Donald H. Menzel, assistant professor of astronomy, for an investigation of the spectral variations of novae and the chromosphere.

Harry R. Mimno, assistant professor of physics, to measure the effective height of the Kennelly-Heaviside layer.

Henry A. Murray, Jr., assistant professor of abnormal and dynamic psychology, to conduct experimental studies of personality.

Ralph B. Perry, professor of philosophy, to record the thought and character of William James, as revealed in unpublished correspondence, notes and marginalia.

Percy E. Raymond, professor of paleontology, and William E. Schevill, assistant curator of invertebrate paleontology, for a study of Ordovician and Salurian formations and faunas in Esthonia.

Chalmer J. Roy, instructor in geology, for a study of silicification of the limestones in the Tri-State zinc-lead district.

Paul J. Sachs, assistant director of the Fogg Art Museum, to complete a catalogue Raisonné of original master drawings.

George B. Wislocki, professor of anatomy, for the preparation of plates to accompany a manuscript en-