

areas rocky uncinariasis can probably be made and kept negligible.

Not so vulnerable are the rest of the natural losses and most of them are beyond the reach of any preventives man can apply. Starvation is perhaps still the most serious of these, but at least a close second are the constant and typical cases of asphyxia neonatorum, or suffocation of the new born, a hitherto unidentified fatality among the seals. This is an early loss, begins with the first births and of course ceases promptly with the last. Eighteen per cent. of the dead pups examined before the middle of August were thus asphyxiated, but as the autopsies did not begin (save for two cases) until July 23, when the height of the season was well passed, the indicated death rate of 2.3 per thousand is much too low. Pups dead of asphyxia neonatorum are promptly recognized by the presence of meconium and complete pulmonary atelectasis, or lungs without air. The meconium is made up of the products of metabolism of the fetus, accumulated in the large intestines during gestation, and is voided soon after birth. A few cases have only partial meconium and incomplete atelectasis. The immediate cause of the failure to establish breathing is inferred to be obstruction by the fetal membranes. Most pups are born more or less invested by parts of what was the bag of waters. The cow delivering her pup instantly proceeds to tear off the caul with her teeth, but she does not always succeed until after the pup is dead. The dead pups seldom show adhering membranes but one striking example, found on St. George Island by Mr. Clark, is significant. The caul was intact, fitted perfectly the whole head and effectually sealed the respiratory passages. Usually the little victims never get their first breath. Trampling or overlying at the critical moment probably prevents breathing in a few cases independently of the fetal membranes. There is no evidence that any of the pups examined was dead before birth.

In 1896 and 1897 this species of suffocation must have ranked third, or possibly second, in importance. Many of the earlier dead of those years, which were seen lying largely in-

accessible in the heart of the harems and inferred to belong with the losses from *Uncinaria*, were probably suffocated at birth. It is characteristic of this loss that many of the dead are found in the original area of the harem as first formed, and all of them directly on breeding grounds. The pups die on the spot where born. Deaths from this cause will continue indefinitely, the defect in seal obstetrics being remediable by nature alone. But the loss may perhaps not increase much faster than *pari passu* with the growth of the herd, which is not the case with uncinariasis and apparently not with starvation and other losses. Roughly speaking there are now one third to one half as many breeding seals and young as in 1896; but the pup loss is one seventh and the adult loss one fifth that of 1896. As the various well-known losses have decreased in a much faster progression than the decrease of the herd, they may be expected to increase with its growth with corresponding rapidity, though the matter is to some extent influenced by such controllable factors as the proportion of bulls to cows.

The death of adult breeders is mainly from fighting, accidents of pregnancy and of other kinds. During the season of 1912 this loss was about 30 as against 159 in 1896.

An incidental discovery of less importance but of much interest, was made by Mr. Clark and the writer during the counting of the pups. It has been supposed that the ability to swim is not a birthright of the fur seal pup but an acquirement gained by diligent practice in August. The stampeding into the sea and ready swimming early in August of hundreds of pups which had never before been in the water, and corroborative observations, show that the pup can swim just as soon as it acquires sufficient strength and can manage its limbs.

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MEMORIAL OF A CENTENARY

THE interest of the annual meeting of the Academy of Natural Sciences of Philadelphia was enhanced by the presentation of an advance copy of the fifteenth volume of the

quarto *Journal* of the society published in commemoration of the celebration last March of the one hundredth anniversary of its foundation. The volume consists of 753 pages illustrated by 59 plates, six of which are in colors. The work has been printed on specially prepared paper and is a noble specimen of typography. It is divided into two sections, the first consisting of the proceedings of the centenary meeting, an account of the banquet, a list of delegates, and a selection from the letters of praise and congratulation received from corresponding institutions at home and abroad, while the second part contains the following memoirs contributed by members and correspondents:

"Human Spermatogenesis, Spermatocytes and Spermiogenesis: A Study of Inheritance," by Thomas Harrison Montgomery, Jr.

"A Contribution to the Paleontology of Trinidad," by Carlotta J. Maury, with plates drawn by Gilbert Dennison Harris.

"Early Adaptation in Feeding Habits of the Starfishes," by John M. Clarke.

"Mimicry in Boreal American Lepidoptera," by Henry Skinner.

"The Petrographic Province of Neponset Valley, Massachusetts," by Florence Bascom.

"Description of a New Fossil Porpoise of the Genus *Delphinodon* from the Miocene Formation of Maryland," by Frederick W. True.

"A Synopsis of the Fishes of the Genus *Mastacembelus*," by George A. Boulenger.

"The Faunal Divisions of Eastern North America in Relation to Vegetation," by Spencer Trötter.

"The Relation of Smell, Taste and the Common Chemical Sense in Vertebrates," by George Howard Parker.

"On the Supposed Tertiary Antarctic Continent," by Sir William Turner Thistleton Dyer.

"Mollusk Fauna of Northwest America," by William Nealy Dall.

"The Relation of Plant Protoplasm to its Environment," by John Muirhead Macfarlane.

"Tetraplasy, the Law of the Four Inseparable Factors of Evolution," by Henry Fairfield Osborn.

"The Phylogenetic Value of Color Characters in Birds," by Witmer Stone.

"Further Experiments with Mutations in Eye-color of *Drosophila*: the Loss of the Orange Factor," by Thomas Hunt Morgan.

"On the Radiation of Energy," by James Edmund Ives.

"The History and Zoological Position of the Albino Rat," by Henry Herbert Donaldson.

"The Gorgonians of the Brazilian Coast," by Addison E. Verrill.

"New Observations in Chemistry and Mineralogy," by George Augustus Koenig.

"A Study of the Variations and Zoogeography of *Lignus* in Florida," by Henry Augustus Pilsbry.

"Analyse der Süd-Amerikanischen Heliceen," by H. von Ihering.

"Experimental Studies in Nuclear and Cell Division in the Eggs of *Crepidula*," by Edwin G. Conklin.

A view of the academy's building serves as a frontispiece to the volume.

A copy of the academy's first publication in 1817, an unpretentious small octavo, was placed beside the sumptuous volume just issued. The earlier issue was printed on paper which has held its own through the wear and tear of more than four-score years and ten, although by no means specially manufactured for the purpose. A distinction was given to the volume by contributions from Ord, Say, Nuttall, Waterhouse, MacLure and Lesueur and by the really beautiful engravings of the last named naturalist, but the contrast of this first publication with the volume just completed is not so great as that of the academy of 1817, housed in three little rooms up Gilliam's Court with the society as now established and endowed.

The chairman of the library committee, Dr. Thomas H. Fenton, spoke at the last meeting of the academy of the commemorative volume as a fine specimen of book making and of the value of its contents as contributions to science, calling special attention to its promptness of issue, as distinguished from the delay usual in the appearance of such memorial publications. He offered the following which was unanimously adopted:

Resolved, That it is the sense of this meeting that the sincere thanks of the academy are due to the recording secretary, Dr. Edward J. Nolan, for his untiring zeal and industry in the preparation and editing of the splendid memorial volume pre-

sented to-night and for its extraordinarily prompt completion.

The entire edition will be ready for distribution before the end of the year.

SCIENTIFIC NOTES AND NEWS

A BRONZE bust of Dr. Eugene W. Hilgard, emeritus professor in the University of California, was recently unveiled in the foyer of the new agricultural hall at the same time that the building was dedicated. The occasion was also marked by the formal investiture of Professor Thomas F. Hunt as dean of the department of agriculture.

ON Friday, the thirteenth of December, a complimentary dinner was given at the Cosmos Club to Dr. Theodore Nicholas Gill, of the Smithsonian Institution, in commemoration of the seventy-fifth year of his life and of the fifty-fifth year of his publishing activities as a naturalist. More than one hundred guests were in attendance, mainly scientific men. Admiral Stockton, U.S.N., president of the George Washington University, presided. Dr. L. O. Howard, permanent secretary of the American Association for the Advancement of Science, acted as toastmaster. The speakers were Dr. Herbert Putnam, librarian of Congress; Dr. C. E. Monroe, professor of chemistry in George Washington University; Dr. B. W. Evermann, of the U. S. Bureau of Fisheries; Dr. A. F. A. King; Dr. Hugh M. Smith, of the Bureau of Fisheries, and Dr. W. J. Holland, of the Pittsburgh Museum. Dr. Gill's remarks in reply were largely retrospective of his long residence in Washington and his connection with the Smithsonian Institution. Many letters were read from prominent naturalists and old friends of Dr. Gill. The dining room was festooned with fish-nets; aquaria were placed here and there upon the tables, and corals and sea forms of different kinds were intermingled with flowers as table decorations.

ON the evening of December 13 a dinner was given in honor of Dean W. F. M. Goss by local members of the American Society of Mechanical Engineers, members of the faculty

of the College of Engineering and members of the Council of Administration of the University of Illinois. The dinner was given in recognition of the election of Dean Goss to the presidency of the American Society of Mechanical Engineers.

CAPTAIN ROALD AMUNDSEN will be the guest of honor at the annual banquet of the National Geographic Society on January 11, in Washington. Rear Admiral Robert E. Peary will act as toastmaster. Captain Amundsen, a gold medalist of the National Geographic Society, for his voyage through the Northwest passage, is again gold medalist of the society for the discovery of the South Pole.

AMONG the prizes offered for competition by the Académie des Sciences the most important is the Bréant prize (100,000 francs, \$20,000) for the cure of Asiatic cholera. From the income of the Bréant foundation the Paris Academy of Sciences has awarded prizes of \$500 to Dr. Carlos J. Finlay and to Dr. A. Agramonte, of Havana for their work on the rôle of the mosquito in the propagation of yellow fever.

OXFORD UNIVERSITY has conferred the degree of doctor of science on Professor Ernest William Hobson, fellow of Christ's College, and Sadlerian professor of pure mathematics at Cambridge.

THE Royal Geological Society of Cornwall has awarded its Bolitho gold medal to Mr. Geo. Barrow, for his services to Cornish geology.

MAJOR E. H. HILLS, F.R.S., has been appointed honorary director of the observatory, University of Durham.

DR. ADELINE AMES, Ph.D. (Cornell, '12), has been appointed assistant forest pathologist in the Bureau of Plant Industry, Washington, D. C.

DR. JAMES A. HONEIJ, Cambridge, has been appointed assistant physician at the Leper Colony, Penikese Island. He will have the use of the laboratory of the Harvard Medical School and will make a study of the fifteen cases of leprosy now on the island.