

nautilus forms new chambers in its shell. The breathing of the animal is in striking contrast to that of many other cephalopods. In *Octopus*, for instance, the inflation and emptying of the respiratory cavity involves the combined action of the muscular mantle and the funnel; in *Nautilus* the operation is carried out exclusively by the funnel, the mantle being a thin membrane applied to the inner surface of the shell. From the fact that animal bait of almost any kind may be used with success in capturing the nautilus, it is probable that this mollusc feeds naturally on almost any animal substance. Apparently it inhabits normally the bottom of the sea, for those taken near the surface are nearly always moribund. The wounds of injured specimens heal at the edges, but without regeneration. Variation was most noticeable in the disposition of certain unsymmetrical organs. Thus the main siphuncular artery may arise from either the left or the right division of the posterior pallial artery. In one instance a *situs inversus* of the reproductive organs was observed, in that the vas deferens was found on the left side instead of on the right and the pyriform gland was on the right, instead of the left. These and many other new observations on the structure and natural history of the nautilus fill the concluding part of the 'Zoological Results' and bear witness to the energy and patience of Dr. Willey as a field zoologist and explorer, even though in the end he was obliged to abandon his quest for the developing eggs of the pearly nautilus.

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SCIENTIFIC JOURNALS.

The *Journal of Comparative Neurology* for June contains four leading articles, besides the usual book reviews: (1) 'An Enumeration of the Medullated Nerve Fibers in the Dorsal Roots of the Spinal Nerves of Man,' by Charles Ingbert. There is given a figure of a typical cross section of each dorsal spinal root, with a tabulation of the number of nerve fibers in each fascicle of each root. The total number of medullated nerve fibers in the

dorsal roots of the left side of a large man is 653,627; the total area of the cross sections of these roots is 54.93 sq. mm.; there are on the average 11,900 medullated nerve fibers per sq. mm. of cross-section of these roots. This paper will be followed by a similar enumeration of the ventral roots. (2) 'On the Phylogeny and Morphological Position of the Terminal Buds of Fishes,' by C. Judson Herrick. On both physiological and morphological grounds these organs are to be classed with the taste buds of the mouth cavity and not with either tactile or lateral line organs. (3) 'On the Nature of the Pericellular Network of Nerve Cells,' by Shinkishi Hatai. Supports in general the views of Held that this network is composed of the terminal arborizations of axones of other neurones and concludes that the networks of Golgi and Bethe are of the same type. (4) 'The Neurokeratin in the Medullary Sheaths of the Peripheral Nerves of Mammals,' by Shinkishi Hatai. A new technique brings out the details of the structure of the neurokeratin framework more clearly than has hitherto been done. This substance is arranged in two layers, one beneath the primitive sheath and the other along the axis cylinder, which are connected by bands of neurokeratin which run obliquely from the outer to the inner layer in a funnel-shaped pattern. Neither the outer nor the inner layer is interrupted at the nodes of Ranvier.

THE statement recently quoted in this journal regarding the establishment of the *Journal for Infectious Diseases* to be edited by Professors Ludvig Hektoen and E. O. Jordan is inaccurate. The journal is supported by contributions from Mr. and Mrs. Harold F. McCormick, but no specified sum has been given to endow the journal. It is to be published by the Memorial Institute for Infectious Diseases, not by the University of Chicago.

DISCUSSION AND CORRESPONDENCE.

THE GRAND GULF FORMATION.

TO THE EDITOR OF SCIENCE: The communication of Dr. Dall on the Grand Gulf forma-