able condition, which is not in use, and is willing to part with it for work of national importance at a reasonable price, I should be glad to hear from him the particulars as to type, condition, and price desired. When the war is over machines will return to their normal price—indeed, will probably be at reduced prices, for the war has taught many persons their value, and the market will be wider than it has hitherto been, so that foreign monopolies are certain to be broken down.

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The Hippocampus in Ancient Art.

REPRODUCTIONS of early figures of the common Mediterranean species of *Hippocampus* have been published by Prof. Raymond Osburn in the *Zoological Bulletin* for March, 1915, and also by the present writer in the annual report of the Smithsonian Institution for the same year.

It is remarked in the latter of these articles that no mention is found in Aristotle of this striking form of fish-life, and the term "*Hippocampus*" was used by the poets of classical antiquity as the name of a sea monster, half-horse and half-fish, on which sea divinities rode. Nevertheless, the design of the seahorse occurs not infrequently in the plastic arts of Hellenistic civilisation, both in Greece and in Italy. The seahorse is figured occasionally also among the island gems, as stated by Fürtwangler, who figures one of them (*Antike Gemmen*, vol. i., pl. v.).

Figures of animals, including fishes, represented in ancient Grecian vase paintings have been made the subject of special study by a young French artist, Morin-Jean,¹ and a compatriot of his, P. H. Boussac, has written interesting articles on fish designs inscribed in ancient Egyptian monuments.²

FIG. 1.—Hippocampus, from an Egyptian mummy-case, c. 500 B.C.

Only one instance is known where the *Hippocampus* is depicted in ancient works of art from the Nile valley. The design referred to forms part of a decorative painting in the interior of a mummy-case dating from the Twenty-sixth Dynasty (700–500 B.C.), now preserved in the City Museum of Gloucester. A brief description of it is given in vol. ii. of the "*Historical Studies*" published by the British School of Archaeology in Egypt, and this is accompanied by a photograph of the original, which we have copied in the annexed figure.

Certain of the details are thus indicated in the description just referred to:—"The greater part of the *Hippocampus* is outlined in black on the white ground of the coffin; the ears, the eyes, the nostril, and the mane [*i.e.* conventionalised dorsal fin] are indicated in black; round the jaw is a wide black band edged with yellow; the muzzle is yellow with black dots; the wide horizontal stripes on the neck are alternately blue and red edged with black. . . . The date of the coffin accords well with the period of the archaic Athenian pediments."

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¹ "Le dessin des animaux en Grèce, d'après les vases peints." Pp. 262, illustrated. (Paris, 1911.)

² "Les poissons sur les monuments pharaoniques," *Le Naturaliste*, vols. xxxi. and xxxii. (1909–10).

THE HUNDRED-INCH REFLECTOR OF THE MOUNT WILSON OBSERVATORY.

BY the courtesy of Prof. Hale we are able to reproduce the accompanying interesting photographs relating to the giant reflector of the Mt. Wilson Observatory, which is now rapidly approaching completion.

The history of this great telescope dates from 1906, when Mr. John D. Hooker, of Los Angeles, presented the sum of 45,000 dollars to the Carnegie Institution for the purchase of a glass disc and to meet other expenses incident to the construction of a 100-in. mirror for a reflecting telescope of 50 ft. focal length. In making this gift, Mr. Hooker was well aware that the construction of such an instrument was to be regarded as an experiment, but in view of the great possibilities in astrophysical research which a large reflector seemed to offer, the experiment was considered to be well worth making. No insuperable difficulty was anticipated in the casting of a suitable disc by the French Plate Glass Company, of St. Gobain, and there was every reason for confidence in Mr. Ritchey's ability to grind and figure the mirror to the highest pitch of perfection. Experience already gained with the 60-in. telescope also gave confidence that the mounting of the larger instrument could be successfully accomplished.

Although no financial provision was made for the mounting and housing of the proposed telescope, Mr. Hooker's gift was accepted, in the confident belief that in due course a donor would be forthcoming.

An order for the disc was accordingly placed in the autumn of 1906, and the building in which the grinding, figuring, and testing of the mirror were to be carried on was erected during the following winter. In 1908 Prof. Hale reported that a disc had been successfully cast, but in the following year it was stated that on its arrival in California the disc exhibited many defects, and had been immediately rejected. The makers generously expressed their willingness to bear the loss and to make a further attempt. A large furnace and melting-pot capable of holding twenty tons of material were constructed, and improved methods of annealing were introduced. Early in 1910 another large disc was successfully cast, but owing to defects in the mould, strains were set up during annealing, and the disc was broken.

In view of this disappointment it was resolved to make a trial of the disc which had previously been laid aside, and grinding was commenced in the autumn of 1910. Meanwhile, further attempts to cast a disc free from flaws and bubbles were made, but again, owing to difficulties of annealing, a second disc was fractured in the oven. In the course of these trials, however, a flawless disc of the necessary diameter was produced, but its thickness was only 8 in., and this was not considered adequate to prevent deformation, unless a very perfect system of supports could be devised.

Mr. Hooker, unfortunately, did not live to witness any progress beyond this stage, having died on May 24, 1911.