as seen in the amino-acid sequences of the same protein of many species have a counterpart in the relatively rapid change from the normal to the cancerous state. Dr S. Weinhouse (Philadelphia) concluded, after study of several glycolytic enzymes, that certain types of Morris hepatoma tumours produce a switch in genome readout involving the suppression of enzymes concerned with hepatic function and the unmasking of other enzymes normally suppressed in their tissues of origin. Dr M. Farber (Pittsburgh) spoke of a chemically induced "hyperplastic nodule" that is homogeneous, not normal, but not yet cancer, and which seems to be a "precursor"; from this relatively homogeneous cell population a heterogeneous mixed population of cancer cells evolves. These "precursor" cells have abnormal DNA and carbohydrate metabolism.

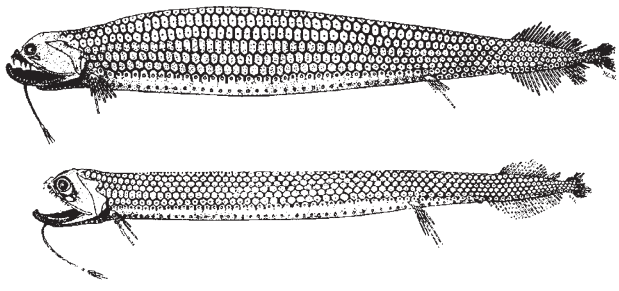
The homology and variations of the gamma globulins with respect to both primary structure, discussed by Professor R. R. Porter (Oxford), and tertiary structure, discussed by Dr F. W. Putnam (Bloomington), reflect the "fast evolution" of response to antigens with variations in structure, both primary and tertiary, which play a part in determining the antibodies formed, as Professor M. Sela (Rehovot) pointed out. The results of researches with substances of known structure, leading to exact chemical data, throw no more light on the origin of cancer than less exact studies. But Dr M. Potter (Bethesda), making use of myeloma protein synthesis, found that the precursors of neoplastic cells actively formed antibodies when they underwent neoplastic transformation.

Dr H. Busch (Houston) reported further evidence of a "cancer operon" as evidenced by the nature of the RNA found in the nucleolus of cancer cells. Finally, a way of studying the genome which controls the events leading to the replication of DNA, which precedes mitosis in cancer, was described by Dr R. Beserga (Temple, Philadelphia). He has used salivary glands taken from rats and then treated with the catecholamine isopreterenol.

ICHTHYOLOGY

New Name in Deep Waters

THE fish in the illustration has been raised recently from subspecies to full species by Dr Robert H. Gibbs jun. of the Smithsonian Institution. This creature, which inhabits the deep waters, between 200 and 1,000 metres down, in the eastern tropical Pacific, was first included in the species *Stomias colubrinus* by Brauer in 1906, and in 1964 Blache decided that it was a subspecies and called it *Stomias colubrinus orientalis*.



Stomias lampropeltis. The upper fish is the female, 233 mm long; the lower is the male, 95·8 mm long.

Gibbs, however, scorns this distinction, based on a statistical test of differences from specimens of *S. colubrinus* living in the south-eastern Atlantic. He is not prepared to accept differences between two nominal subspecies if they are so slight as to be unrecognizable from an inspection of specimens. But he has looked again at the two populations and found a much more impressive difference than Blache's variations in rays and photophores. The teeth and their arrangement are sufficiently different, according to Gibbs, to distinguish the eastern population as a separate species, *Stomias lampropeltis*, from the Atlantic population, which remains *Stomias colubrinus* (*Smithsonian Contributions to Zoology*, No. 31; 1969).

This piece of taxonomy is but one aspect of a study of the ten species and subspecies of *Stomias*, during which Gibbs was the first person to describe sexual dimorphism in this genus. The sexes differ principally in that males are smaller than females and tend to have larger eyes.

ARCHAEOLOGY

Signs of Early Man

THE village of Swanscombe, on the banks of the River Thames in Kent, may in a year or two yield the first intact Lower Palaeolithic camp site to be found in Britain. Dr J. A. Waechter told members of the Royal Anthropological Institute on February 5 that the first two seasons of excavations sponsored by the institute have proved more promising than pessimists expected, and have yielded what seems to be a refuse dump. If this is so it can only be a matter of time and careful excavation before a camp is found nearby.

Such a find would thoroughly vindicate everyone who has supported the project of excavating this site. It is of course best known for having yielded in 1935, 1936 and 1955, three bones which fitted together to make up the back of the skull of Swanscombe man, dating from the second interglacial period (200,000 to 350,000 years ago). Because the front of this skull was never found it has not been possible to say more than that this was a being very similar to *Homo sapiens*. Waechter feels that at least one of these men must have drowned himself in the lake that used to stand nearby, and have been preserved intact in the sediments. This would be a great find indeed.

When the present investigations began in 1968 the site, previously much dug for chalk and gravel but now protected by the Nature Conservancy, had been more or less cleared of the upper layers of gravel. These contained the typical flint hand axes of the Acheulian culture (which lasted from about 200,000 to 100,000 years ago). But the lower layers of loam and gravel, which had remained untouched since they were once covered by the still water of the lake, held promise of yielding material dating from the earlier Clactonian culture (probably 250,000 years old). This promise was fulfilled in 1968 and 1969. Throughout the lower loam Waechter and his team found Clactonian flints, which are more primitive than their Acheulian counterparts, some in mint condition. There were also considerable quantities of antlers, one complete set attached to the skull of a red deer. Other finds in the loam included elephant bones, the tooth of a rhinoceros and a complete skull of a bear. The gravel below