

applied to that part of the canal, whatever its shape, where the typical simple tubular (gastric) glands are present. In it should be included the pylorus, the part, long or short, characterised by the great development of the circular muscle layer; but oesophagus should be strictly segregated. If 'stomach' only means, as seems usual at present, an expanded part of the canal in this region, we need a term to apply to the region when it is not expanded and, in addition, we have to talk about part of a 'stomach' being a 'true stomach' and about 'stomachs' being partly oesophageal. After all, there should at least be one name for each functionally distinct part, unless two or more of such parts are always found in combination, and here we are actually one short. So this is the solution I propose: Stomach to be as defined above, oesophagus to be the part between the pharynx and the stomach, crop or ingluvies to be an expansion of the oesophagus, and a new term, oesogaster, to be applied to an expansion of the posterior part of the oesophagus combined with the stomach: this oesogaster may be simple, like that of the Polypterini, or complex like that of the Ruminantia. By this means all the names would, I believe, have a really useful application.

Let us now consider the other three names. The differentiation of the intestine into 'small' and 'large' took place at the time when so many other fundamental changes occurred in the anatomy of the vertebrata, *i.e.* when they took to life on land. It was as necessary to develop a 'large intestine' as to substitute a pulmonary for a branchial method of respiration, because the conservation of water became an essential item in the economy of the individual. So the intestine lengthened, a hinder portion lost its digestive function so as to specialise in absorption, and the differentiation of the 'large' and 'small' intestine was thus brought about. In the higher forms these two parts have elongated and undergone further differentiation, so that more names have been found useful, but these should not be applied to parts of the lower forms. 'Rectum' (the name applied to that last portion of the large intestine concerned with the preparation of the intestinal contents for defæcation) should therefore not be used as a synonym for 'large intestine,' and the latter name should not be applied to the post-valvate portion of the intestine of fish.

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#### An Improved Mercury Vapour Trap.

INGRESS of mercury vapour from mercury vapour condensation pumps into systems undergoing evacuation is prevented in practice by freezing out the mercury vapour in liquid air-cooled traps. The chief drawbacks to this method lie in the cost of liquid air and in the need of attention in replenishing the liquid air as long as the trap is required to remain in action.

Hughes and Poindexter (*NATURE*, vol. 115, p. 979; 1925) described an alternative method of trapping mercury vapour by means of thin films of distilled alkali metal, either sodium or potassium. This method, whilst probably as efficient as freezing out by liquid air, suffers from the disadvantages that the surface of the metal soon becomes clogged, particularly with large pumps, and that renewal of the alkali metal film involves distillation of the metal; a process destructive of glass or silica apparatus.

During the last ten months I have used with complete satisfaction a liquid alloy of sodium and potassium in order to trap mercury vapour. The

alloy is prepared by melting together, in an inert atmosphere, sodium and potassium in the proportions 1 to 2. The liquid alloy is then poured through a tap funnel into the trap, filled with an inert gas, and consisting of a twelve-inches long wide-bore glass tube provided with inlet and outlet tubes for attaching to the pump and vessel undergoing evacuation. Oxides and scum remain in the tap funnel, clean alloy alone passing into the trap.

Mercury vapour is retained by the alloy in the form of a solid amalgam which collects on the surface of the alloy. The latter may be oxidised to a considerable extent before its powers of retaining mercury fall off to any considerable extent. Regeneration of the alloy surface can be simply effected either by shaking the trap and thus causing cracks to develop in the surface layer of amalgam or oxide, or, better, by sweeping the alloy surface free from such layers by means of a ball or coil of iron wire originally inserted into the trap and moved about therein by means of an external electro-magnet.

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#### Dug-out Canoe in Algoa Bay.

THE canoe found on the shore of Algoa Bay and illustrated in Mr. FitzSimon's letter in *NATURE* of May 21, p. 746, differs in several respects from those of the Mawken or Selungs of the Mergui Archipelago. During many months spent among those people, I do not remember ever to have seen a Mawken canoe, a kabang, in which the solid hull, apart from the palm stem bulwarks, did not have a gradual sheer from amidships upwards to bow and stern. But more important still, the Selung kabang has a semi-circular notch cut out of the prow and stern of the hull. These form steps by which it is safe and easy to climb into the canoe from the water. I feel sure that whatever may be the origin of the canoe found in South Africa, it did not come from the Mergui Archipelago.

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May 23.

I WOULD suggest that, in order to find the home of the canoe which Mr. F. W. FitzSimons discovered on the beach of Algoa Bay (*NATURE*, May 21, p. 746), it is scarcely necessary to look across 5000 miles of ocean. Canoes of this type, with two upturned ends, are commonly carried as tenders by the many Arab dhows which trade along the northern part of the east coast of Africa and from Port Sudan to Zanzibar—and also along the west coast of Madagascar; very similar canoes, either with or without outriggers, are ordinarily employed by the local fishermen.

A model of one of these dhows' canoes may be seen in the Ship-Model Collections of the Science Museum, South Kensington, and if viewed from the direction in which the photograph of the Algoa Bay derelict was taken, it shows a very close similarity in shape. Owing, however, to the derelict having lost the light wash-boards which served to heighten its sides, the photograph gives an appearance of less depth amidships and of exaggerated height at bow and stern.

Instead of the upturned bow of the Algoa Bay canoe, the typical canoes of the Mergui Archipelago are built with the projecting bow, suggestive of the ram of late nineteenth-century warships, which is so commonly seen on the Irrawaddy.

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