argon, neon, krypton, sodium, potassium, and mercury for molybdenum $K\alpha$ and copper $K\alpha$ radiation and experiments are in progress to test these results.

A detailed account of this work will be published elsewhere.

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Raman Effect in Hydrogen Sulphide.

THE Raman spectrum of hydrogen sulphide, both in the gaseous and liquid states, has been successfully photographed by me. The liquid exhibits a single intense and quite sharp line shifted by 2578 wave-numbers from the exciting mercury radiation. With the gas, the line appears in a slightly different position, with a frequency shift of 2615 wave-numbers, and is distinctly more diffuse than in the liquid. According to Barker and Meyer (*Trans. Far. Soc.*, **25**, 912; 1929) the infra-red absorption spectrum of gaseous hydrogen sulphide shows a complex band at about $3{\cdot}7\,\mu$ which evidently represents the superposition of rotation on this vibrational frequency. The plates for both the liquid and the gas showed indications of other faint lines or bands which were adjacent to the exciting mercury radiations and presumably could be ascribed to a rotational Raman effect. It may be remarked that the line observed with the liquid hydrogen sulphide is identically in the same position as a prominent line obtained in the Raman spectra of a series of organic hydro-sulphides studied at Calcutta by Venkateswaran, and also in its frequency shift with an important infra-red absorption frequency of these compounds.

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Pearl-like Object found in a Prawn.

IN 1910 Prof. F. H. Herrick, of the Western Reserve University, Cleveland, brought to the notice of the scientific world, through the columns of the *American Naturalist* (vol. 44, pp. 294-301), the very interesting find of a pearl-like structure embedded in the muscles inside the claw of a lobster. The object, which was believed to be unique, was first examined by some pearl dealers, and declared to be a true 'lobster pearl'. It was more or less spherical, with one flat side, and was 11 mm. in diameter. Its specific gravity was 1·45 and hardness 'about 3'. After a careful examination of the object, Prof. Herrick came to the conclusion that the 'pearl' was only an ingrowth of chitin due to some "vagary of the process of regeneration".

Recently a similar 'pearl' has been brought to me by Mr. D. D. Mukerji, of the Zoological Survey of India. It was really discovered by his sister, Miss Jutheca Mukerji, who, while eating a prawn (a small Peneid), felt something hard between her teeth. As only the abdominal region of the prawn is eaten, it seems evident that the 'pearl' must have been embedded in the thick abdominal muscles.

The 'pearl' is spherical in shape, with slight protuberances and hollows. There are two or three fairly large irregular depressions on the surface, but these are probably due to some mechanical cause, perhaps to the action of the teeth while the prawn was being eaten. The 'pearl' is more or less uniformly round, without any flat pole. It is slightly less than 3 mm. in diameter and its absolute weight is 0·0174 gm. Its specific gravity is about 1·32 and the refractive index 1·558. It is practically colourless and has a somewhat pearly lustre. It is transparent and has no nucleus. Its hardness is about 2·5. Dr. J. A. Dunn, Curator, Geological Survey of India, who has kindly measured the specific gravity, refractive index, etc., for me, is of the opinion that it is made of material which "grew radially from the centre, the crystalline direction radiating outwards from the centre, so that the sphere shows a dark cross between crossed nicols, which rotates with the nicols, analogous to a radiating fibrous mineral". On a careful examination the 'pearl' appears to be formed of close concentric layers. The outer surface is covered throughout by extremely fine meridional striations, and in places, when the outer layer is broken, the striations can be seen on the inner strata also. Another remarkable feature of the 'pearl' is that it is apparently somewhat porous. In the course of the specific gravity tests, spread over two or three days, it absorbed 0·0004 gm. of water, the weight returning to normal (0·0174) on its being allowed to dry.

FIG. 1.—Pearl-like object (enlarged) from a prawn.

There seems to be scarcely any doubt that the 'pearl' is made of chitin, similar to the hard shell of the prawn. Sollas has shown (*Proc. Roy. Soc. London* (B), 79, pp. 474-481; 1907) that the specific gravity of chitin precipitated from its solution in strong acids approximates to the value of 1·398, and that its refractive index lies between 1·550 and 1·557. In the present case the refractive index agrees with the figure given by Sollas, but the specific gravity is somewhat lower, which may perhaps be due to the concentric formation of the object and its apparent porosity to air and water.

Apart from its lower specific gravity, the present 'pearl' differs from that examined by Herrick in one or two very important respects. The previous specimen had a flat end, which, according to Herrick, represented its place of attachment with the outer shell; the present 'pearl' does not show any signs of ever having been attached. The latter is also formed of close concentric layers, while Herrick's specimen was apparently one homogeneous mass. Further, the surface of the 'pearl' examined by Herrick was punctate, the punctations, according to Herrick, representing the 'hair-pores' of the crustacean shell; in my specimen there are only very fine close striations on the surface.

It is very difficult to express any definite opinion about the origin of this curious object. Herrick was of the opinion that it must have been formed by an ingrowth or pocketing of the outer shell due to some mechanical injury, probably soon after a moult. As