

from *B* to *C*. The Hurst gyroscopic tops which we use are always slightly out of kinetic balance, so that no mass need be added to produce the backward movement.

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Brown Coloration in Interrenal Cell Tissue.

IN a histological investigation of the interrenal of the ray (*R. clavata*), it has been found that while the majority of the glands examined correspond to the usual description of an ochre-yellow body, a minority show a brown coloration apparently due to melanin pigment. In the yellow glands the lipin has been found to be confined to the cells of the lobules which compose the organ, but in the brown glands a considerable proportion of the lipin lies in the interlobular blood-spaces. The photomicrograph (Fig. 1) taken

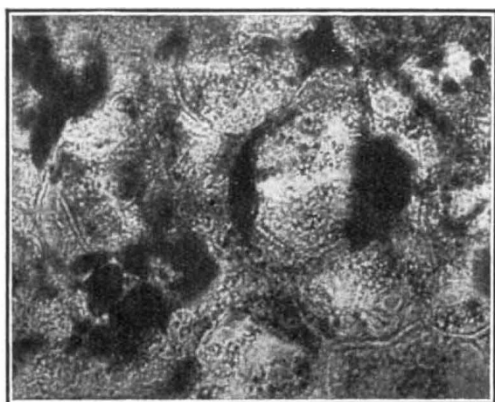


FIG. 1.—Interrenal tissue of *R. clavata*, $\times 500$.

from a gland prepared by Marchis' method shows this quite clearly. The black masses of osmicated lipin obviously lie between the lobules. The appearances suggest very strongly that the brown glands when fixed were actively secreting lipin into the blood. The relation between lipin secretion and melanin formation is probably significant.

The results obtained confirm earlier work done on the rabbit during 1926 at the Physiology Department of the University of Aberdeen.

A demonstration of the work is being arranged for the meeting of the Society for Experimental Biology at Glasgow in September, and a full account is in preparation for publication.

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July 13.

The Origin and Progress of Mankind.

IN the article under the above title in *NATURE* of July 21, I am accused by the writer "J. R." of "ignoring a broad biological principle," presumably because I was careful not to confuse the principle of "convergent evolution" with wild theories of "spontaneous generation." Yet in the very next sentence the author of the admonition somewhat inconsequently adds: "The final scientific criterion must be 'Prove all things.'"

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I had hoped that by dealing in my Huxley Memorial Lecture with the history of biological and ethnological theories I might exorcise such elements of confusion. For I made it clear that the ethnological dogma of the "independent development of culture" was utterly different from the biological principle of convergence, and was in fact a survival of the pre-Newtonian type of scholasticism, which led men astray precisely because it did not insist upon the principle "Prove all things."

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THERE is no analogy between the idea that in similar circumstances similar customs and inventions may have arisen and the discredited biological theory of spontaneous generation, for at whatever stage of human development different communities, as they are known to us, may have left the main stock, they already had behind them a vast background of common experiences, of mental and social development, the basis of their further progress. Granted that as an ethnological dogma the similarity theory has been a bad master, there seems to be no reason why in its proper place it should not be a good servant, and our protest was against the danger of treating as non-existent the common background of humanity and all that it implies.

J. R.

The Instability of a Single Vortex-Row.

IT was shown by von Kármán in a well-known paper that a single row of vortices equally spaced and all rotating in the same sense is unstable; but the constructive consequences of this result seem to have received less attention than the destructive ones. It is shown that a disturbance of the pattern increases with time like $e^{\lambda t}$; λ is greatest when the displacements of consecutive vortices are equal and opposite (Lamb, "Hydrodynamics," 5th edition, p. 209, equation 12). Hence the type of disturbance that develops most rapidly is one that tends to separate the row into two rows, consecutive vortices going into different rows.

Now when a stream is obstructed by an obstacle projecting into it, the free stream line at the edge of the wake degenerates into a row of eddies all of the same sense, and this can be seen to separate in the way just indicated. Some of the eddies are deviated

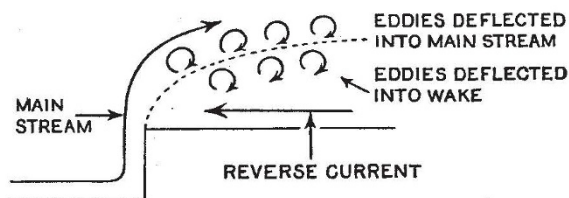


FIG. 1F

into the main stream and swept away in it, while the others enter the dead water, where they produce a circulation with a reverse current near the boundary (Fig. 1). The reverse current often noticed behind the wind screen of a motor car, behind an obstacle at the edge of a stream, or on the lee side of a hill, is thus qualitatively explicable.

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