

surface illustrated in Fig. 3. It may be mentioned that the images formed by the $K\alpha_1$ - and $K\alpha_2$ -radiations are partly superimposed.

It is expected that the resolving power of the method, which at present lies at about 0.1 mm., can be appreciably increased, and that the use of the method can be extended to elements emitting softer characteristic radiation. Work in this direction is now being done. The method can be applied to investigations on ores and metals and also to follow chemical reactions in the solid state without appreciably changing the object.

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¹ L. v. Håmos, *Ann. Phys.*, (5), 17, 716; 1933. (5), 19, 252; 1934.

Archæology of the Caucasus

REFERRING to the article with the above title in NATURE of June 16, p. 919, the view of Prof. Fessenden has been extended since. On extracting every place name from the Egyptian mythology (Book of the Dead), I found that all appeared in their relative position in the Caucasus. For example, the capital of Osiris was Akret, the Greek capital of the Caucasus was Ekretike. The blessed fertile land was the valley of Iaru in which were lakes of fire, the fertile mid valley of the Caucasus is the Iora, in which are petroleum springs.

So far, the case seemed strong, but incredible, when this appeared in *Ancient Egypt*, 1926, p. 41. Since then I have found at Gaza the typical ribbed daggers of the Caucasus, and a multitude of the toggle-pins with spiral or ribbed stems, which specially belong to the Caspian slopes of the Caucasus (see *Ancient Gaza*, 2, 16). This material result opens our eyes to six migrations from the Caspian basin to Egypt, which have taken place ranging from the Badarian age to Salah ed Din. Exploration of early sites there is urgently needed, ignoring the late material which has attracted attention hitherto.

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The Membrana Granulosa of the Mouse

THE accompanying figure (Fig. 1) illustrates the membrana granulosa of the developing follicle of the mouse, from a preparation fixed with chromic acid and osmium tetroxide and stained with Mallory's connective tissue stain. As the darkly staining cells shown in particular at S.C. are not commonly stressed in descriptions of this tissue^{1,2}, apparently because their presence is regarded as symptomatic of degeneration, it is desired to direct attention to some of their peculiarities.

They are to be found with great constancy in material from the mouse fixed in this way. They are extremely difficult to see in material fixed in Bouin's fluid or in formol. They are of irregular shape, their nuclei are dense and ovoid, their cytoplasm is darker, both before and after staining, than that of the granulosa cells, and they contain sometimes minute granules of fat and commonly a number of small vacuoles. They are to be found in follicles of every

size; in the smallest, one of these cells may reach from the egg to the theca.

Against the view that they are a mark of degeneration may be adduced these considerations: they have every appearance of activity themselves, and they occur in follicles the granulosa cells of which are dividing (see D.C. in Fig. 1). That they are recently intrusive elements seems to be negated by the fact that they occur inside the complete membrana propria (M.P.) with no sign of this growing in. From their appearance there seems little doubt that they are the spindle cells mentioned by Deansley¹ in her description of the early stages of the formation of the corpus luteum in this form.

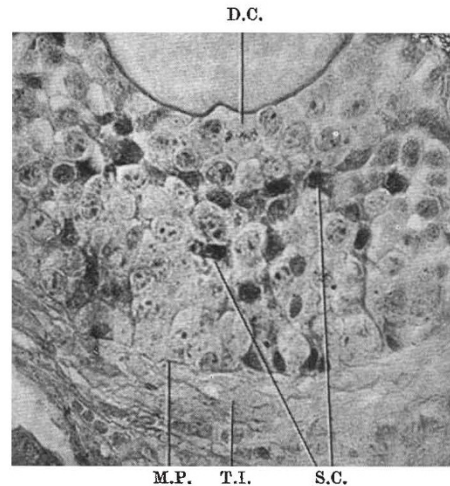


FIG. 1. Membrana granulosa of the mouse. $\times 500$.

They have little in common with the cells of the theca interna (T.I.), and it is suggested that they are among the original inner group of cells which is formed round a developing oocyte, and that there are normally two sorts of cells in the membrana granulosa, one of which, the granulosa proper, forms later the luteal cells, while the other forms the reticulum of the corpus luteum. Similar elements are to be found in similarly prepared material from the cat, the guinea-pig, and, to a less extent, the rabbit.

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¹ Deansley, *Proc. Roy. Soc.*, B, 107, 60.

² Brambell, "The Development of Sex in Vertebrates". Sidgwick and Jackson. 1930, p. 121.

Causes of Formation of Different Forms of Vertebræ

IN Vertebrata we generally find three forms of vertebræ, namely, procœlous, ophisthocœlous and amphicœlous. In the case of fishes, we get exclusively the amphicœlous form. In birds and mammals the vertebræ approach more nearly to the amphicœlous form than to other types. In the case of Amphibia and Reptilia we get all the three forms in different species, and in the latter class sometimes we get all the three forms even in one individual. The importance of the question is self-evident, as different forms of vertebræ furnish characters diagnostic and useful for classification.