

In 1898, when Dr. Gadow was preparing for the use of his students the book "A Classification of Vertebrata", the International Zoological Congress was held at Cambridge. He undertook the task of translating and elaborating Haeckel's address to the Congress, which was afterwards published as a book under the title "The Last Link".

In the course of this task Dr. Gadow was faced with the difficulty of bringing into harmony the views expressed at the Congress respectively by Haeckel and Hubrecht. The former regarded the lemurs as ancestors of man and as Primates belonging to the same sub-order as *Tarsius*, whereas the latter wanted to exclude the lemurs altogether from the Primates and to regard the tarsier almost as an Anthropoid. Gadow invited me to Shelford to wrestle with this difficulty, and, after several days' discussion, he decided that there was only one way of effecting a reasonable compromise between the conflicting views. While the lemurs could not be eliminated from the order, they should be separated from the tarsiers. Hence he proposed a subdivision into three sub-orders, which he called respectively Lemures, Tarsii, and Simiae. Several years later (op. cit. *supra*) I brought these terms into closer relationship with traditional usage by calling the sub-orders Lemuroidea, Tarsioidea, and Anthropoidea. My colleague, Prof. J. P. Hill, has still further clarified the position by separating monkeys (which might be called Pithecoidea) from the apes and man (to which the term Anthropoidea might be restricted) as separate sub-orders—a proposal made by Friedenthal more than twenty years ago, the justification for which was graphically expressed in the phylogenetic diagram in my "Evolution of Man".

By emphasising the nearness of man's affinity to the anthropoid apes, this proposal gives expression to a conclusion which recent research in comparative anatomy, embryology, hæmatology, and immunology is making necessary.

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University College,
London, W.C.1,
Nov. 25.

Lankester's 'Gregarine' from the Eggs of *Thalassema neptuni*.

OUR attention has been directed by Mr. A. D. Hobson, of the University of Edinburgh, to a sporozoan that attacks the developing eggs in the genital pouches (nephridial sacs) of the echiuroid worm *Thalassema neptuni* Gärtner. Of twelve females examined at Plymouth this autumn, eight showed a heavy infection. It is clear that the parasite is the 'Gregarine' observed by Ray Lankester in the eggs of one mature female among those he collected on the south coast of Devon and briefly mentioned in a paper published in 1881 (*Zool. Anz.*, Jahrg. 4, p. 250). Prof. and Mrs. Goodrich in their paper on *Gonospora minchinii* (*Quart. Jour. Microsc. Sc.*, vol. 65, p. 157; 1921) refer to Lankester's notes, but no one seems to have investigated further the organism from *Thalassema*.

A preliminary examination has shown us clearly that it is not a gregarine, but a coccidian; and as this is, so far as we know, the first recorded instance of such a parasite within an egg, we propose to work out the life-history in detail.

It is not surprising that Lankester supposed he was dealing with a gregarine, for the trophozoite is a long, worm-like body, 200 μ to 400 μ in length and 16 μ to 22 μ broad. The cytoplasm is densely granular and appears white by reflected light; the pellicle is very thin; the nucleus lies in the centre of the body. At this stage the parasite is coiled up within the egg;

sometimes three occur together. When pressed out from its shelter, it shows no movement. The parasitised eggs degenerate and are liable to phagocytic invasion. We believe that we have found the schizogonic phase, in which 40 to 50 merozoites are formed, each measuring about 16 μ \times 12 μ . The gametocytes are spherical, the female larger than the male; occasionally a male and a female lie within the same egg. The males give rise to a very large number of flagellated microgametes. We have not yet found the oocysts or spores, and so cannot at present say anything more precise as to the systematic position of the coccidian.

The only true gregarine we have seen in *Thalassema* is a cephaline form living in the gut, sometimes in company with the ciliate *Ptyssostoma thalassemae* Hentschel.

D. L. MACKINNON.
H. N. ROY.

King's College, Strand,
London, W.C.2,
Nov. 21.

Influence of the Para-Foveal Regions on the Foveal Region of the Retina.

THE following simple experiment shows the above influence in a very conclusive manner. Let a piece of black cardboard eight inches square be taken and place this on a wall paper with a coloured pattern. The light in the room should not be too bright, but the experiment can be done easily in an ordinary room with the daylight of the present time. The black cardboard should be viewed with one eye at a distance of six feet, the eye being kept as immovable as possible. It will then be noticed that portions of the colours of the wall paper will appear to detach themselves from the wall paper and move with a slow spiral motion into the black area. This will go on until the whole black area has completely disappeared, the surface being covered with a mixture of colours similar to those on the wall paper.

If a Persian carpet be used for the purpose of the experiment the area will be covered with a mixture of the colours of the carpet. If a uniform colour be used the black area will be covered by that colour. It may even make another colour disappear. For example, if a piece of red paper an inch and a half square be placed on a piece of yellow-green cardboard the yellow-green will invade the red until only a yellow-green surface is seen. If any difficulty be experienced the reader should try the experiment in a dimmer light, but I have not found anyone, at present, who has not seen the phenomenon with ease. It will be noticed how strongly this phenomenon supports my theory of vision, which I regard as a fact, and it seems impossible to explain it on any other theory.

F. W. EDRIIDGE-GREEN.

Board of Trade,
S.W., Nov. 19.

Graptolite Centenary.

My friend Dr. Ami is wrong in supposing that at the University of Birmingham I was associated with the work of Prof. Charles Lapworth on graptolites (*NATURE*, Nov. 16, p. 766). All that I can claim is to have set him free from some of the routine work of his professorship and thus helped him to find time to undertake more original investigation and writing than he otherwise could have done, including the editorship of the Monograph on the Graptolites, written by Miss Elles and Miss Wood (now Dame Shakespear).

W. W. WATTS.

Langley Park Road,
Sutton, Surrey, Nov. 18.