

the mischief. The following facts, however, show this to be incorrect.

In the first place, the tunnels, which run in all directions beneath the cake of mud, are too small to contain the beetles found embedded in it.

Secondly, the beetles are found in many other parts where there is no sign of damage to the bone, and quite commonly, in the case of mummies, beneath the linen wrappings where these are in contact with the skin, in which situation they are frequently embedded in the resin or bitumen which has been used in the mummifying process. In these situations there is, of course, no mud whatever, while the damage to the bones is *always* associated with earthworks and tunnels.

Thirdly, though the same earthworks appear in every direction in the grave containing affected bones, on the roof, walls, coffin, &c., no beetles are ever found anywhere in association with such workings except on the body.

Fourthly, in mummified bodies, where the wrappings, soaked in bitumen, are so hard as effectually to have excluded even the ravages of white ants, the works of which may, nevertheless, cover the *outer* surface of such wrappings, beetles are still found in and about the mouth and nose of the mummy, some stuck to the teeth, others to the linen with which the mouth is filled, but *not* in this case on the outer surface of the wrappings, where they ought to be if they were the authors of the earthworks which cover the mummy cloths.

From these facts it seems clear that the beetles were present before the process of mummification was complete, that they became covered over when the body was wrapped, or possibly were not hatched until this was complete, and so are found stuck to the resinous wrappings. In cases where less bitumen or other substance was employed, and the body was merely wound in cloths, the white ants were able to make their way through these with the greatest ease. While doing so they would come in contact with the beetles which had been included in the wrappings, and these would then perforce become embedded in the mass of earth brought up by the termites. It is noteworthy that *complete* bodies of beetles are seldom or never found in the mud. If carefully examined, their heads, legs, and under parts are usually gone, only the tough wing cases remaining, and these are so strong that to a certain point they will resist crushing with the fingers. On the other hand, beetles complete, so far as the naked eye can detect, in every part, even to the delicate antennæ, have been found under the wrappings, and particularly in the neighbourhood of the mouth and nose. The inference from this is, of course, that the white ants devoured the softer parts of the beetles when they found the bodies of these animals in their path, leaving the hard portions stuck in the mud of their buildings.

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What is the genotype of *X. us* Jones, 1900, based upon a species erroneously determined as *albus* Smith, 1890?

Statement of Case.—Jones proposes a new genus *X. us*, 1900, type species *albus* Smith, 1890.

It later develops that *albus* Smith, 1890, as determined by Jones, 1900, is an erroneous determination.

What is the genotype of *X. us*, 1900; *albus* Smith, 1890, or the form erroneously identified by Jones as *albus* in 1900?

Discussion.—The nomenclatorial problem expressed in the caption of this note is solved in two diametrically opposite ways by different authors.

Some writers maintain that the original *albus* Smith, 1890, is the genotype, while others maintain that the genotype is represented by the species actually studied by Jones and misdetermined as *albus* Smith.

Cases of this general nature have given rise to considerable confusion in nomenclature, and several such cases have been referred to the International Commission on Nomenclature for opinion.

At the last meeting of the Commission, the principles involved came up for discussion, but it was impossible to reach a unanimous agreement. On account of the differences of opinion, the secretary was instructed to make a

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careful study of a number of cases, and to report upon the same to the Commission.

It is not difficult to foresee that, no matter how the cases are finally decided, great dissatisfaction will arise among zoologists, because the opinion rendered is not the direct opposite of what it eventually will be.

Recognising that this is one of the most difficult cases that has ever been submitted to the Commission, and recognising the fact that, regardless of our action, we shall probably be criticised more on the basis of our decision on this case than because of any other opinion that we have rendered, I am desirous of studying at least two cases, if possible, that would come under such a ruling, before my report is formulated.

In view of the foregoing premises, I respectfully request zoologists in different groups to direct my attention to as many instances of this kind as possible with which they are acquainted in their different specialities. Further, since the arguments on both sides of the problem appear to be almost equally valid, it does not seem impossible that the final decision will have to be based upon the arbitrary choice between the two possible rulings, and on this account I am desirous of obtaining all possible arguments on both sides as they occur to different zoologists, and also any personal views based upon convenience or inconvenience, or other grounds, which may be held by different colleagues.

I will hold the case open at least until September 1, for the presentation of arguments by any persons who may desire to submit their views.

C. W. STILES,

Secretary of the Commission.

April 4.

A Kinetic Theory of Gravitation.

As one who for many years has been attracted by the problem of gravitation, I was greatly interested in Mr. C. F. Brush's "Kinetic Theory of Gravitation" (*NATURE*, March 23), and in Sir Oliver Lodge's letter relating thereto (*NATURE*, March 30).

About three years ago I made an attempt to examine how far gravitation might be accounted for by waves of compressional type propagated through the æther (cf. *Phil. Mag.*, January, 1909). Before any such theory can be admitted, even as a working hypothesis, it must be shown by rigorous dynamical methods to be capable of accounting for gravitational attraction. This in itself involves no elaborate analysis, though questions arise as to the fundamental nature of matter and of its motion with respect to the æther.

It appears, in opposition to what might readily be supposed, that Mr. Brush's assumption of a directionally indifferent (isotropic) distribution of waves is not needed; a single progressive train of plane-waves would answer equally well. The real difficulties of the theory are encountered when we consider the several effects, other than gravitational attraction, which might arise from the impact of compressional æthereal waves upon atomic matter. It has to be shown that, under admissible assumptions, the *direct* action of the waves would not give rise to any observable phenomena of motion, and that the heating effect might be *nil*, or small enough to escape observation. Other points no less important have also to be considered; they are dealt with at length in my paper.

I fully concur in Sir O. Lodge's objection to regarding the atom "as a foreign substance—a sort of 'grit' in the æther," and, in the paper referred to, matter was treated as of purely æthereal constitution, the motion of a material body through the æther being regarded as unaccompanied by any bodily transference of *ultimate* matter through finite distances. As to whether the gravitative property of matter is essentially bound up with its constitution, or is due to something external, I think Sir O. Lodge will agree that, notwithstanding metaphysical prepossessions (in which I largely share), we should yet keep an open mind. The real solution of the question is perhaps very different from what we are reasonably entitled to expect!

It may be mentioned, however, that some experiments now in progress seem likely to add very considerably to the difficulty of accepting a compressional-wave theory of gravitation.

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Boar's Hill, Oxford, April 2.