

ing large, transparent, subcircular, nuclear (?) body (*a*), small nucleolar (?) body (*b*), minute globular cellules charged with one or more colourless granules (*c*), sarcodal subfibrous trama in which the cells are imbedded (*d*), cavity of the same in which the cell is situated (*e*), separate cellule much more magnified (*f*).

N.B. This figure is taken from cells in a portion of the sponge which had been placed in spirit and water, where the cellules were much broken down and the nucleolar body appeared not only to be nucleated itself, but to be in contact with the nuclear body.

- Fig. 15.* *Stelletta lactea*, n. sp. : fragment of sandstone rock, showing three portions of the sponge in the excavations made by *Savicavae* respectively (*a a a*), natural size ; dermal surface bearing minute grains of sand (*b*), body-substance (*c*), black pigment lining the cavities occupied by the sponge (*d*).
- Fig. 16.* The same, diagram section, much magnified, showing rounded grains of sand adhering to the dermal layer (*a*), dermal layer densely charged with minute stellates (*b*), zone of trifid and trifurcate spicules which have their heads in contact with the dermal layer (*c*), body-substance (*d*) charged with acerate, trifid, and stellate spicules, together with the sheaf-shaped bundles of minute acerate ones.
- Fig. 17.* The same, acerate fusiform spicule, straight in this point of view, but slightly curved when viewed laterally : *a*, real length.
- Fig. 18.* The same, trifid spicule, lateral view : *a*, real length.
- Fig. 19.* The same, trifid form with furcate extremities.
- Fig. 20.* The same, portion of body-substance greatly magnified, showing the stellates (*a*), the sheaf-like bundles of minute acerate spicules (*b*), and the large acerate fusiform spicules.
- Fig. 21.* The same, stellates of the dermal layer, much magnified : *a*, with large body and short rays ; *b*, with small body and long rays.
- Fig. 22.* The same, sheaf-like bundle of minute acerate spicules of the body-substance, magnified, on the same scale.

II.—*Reply to Dr. Sclater's Paper in the 'Annals' on Testudo chilensis &c.* By Dr. J. E. GRAY, F.R.S. &c.

IN reply to Dr. Sclater on *Testudo chilensis* &c., in the 'Annals' for December 1870, p. 470, I have only to observe that for the accuracy of the habitat of the animals which I described as coming from the Zoological Society, I am solely dependent on the information which I obtained from that institution ; and in the case of the tortoise, I took particular trouble, as the discovery of another tortoise in America was a matter of interest. This being the case, whatever inaccuracy there may be in the habitat is no fault of mine, but that of Dr. Sclater and his subordinates.

It is much to be regretted that an accurate record is not kept of every animal as it is received by the Society, stating how it was obtained, and giving the details of its habitat,

which is open to the inspection of the Fellows of the Society and other scientific visitors, and should be communicated especially to the person who is asked to give the name to the animal to be inserted in the secretary's list of accessions published from time to time in the 'Proceedings.' As both I and others are asked to undertake this office, to save the secretary the trouble of determining for himself the names of the animals, I am often so dissatisfied with the habitat that I obtain with the specimen, that, when I have sent an account to the Society, I have more than once left a blank in the manuscript, that the history of how and where the specimen was obtained might be inserted by the secretary. All this uncertainty would be obviated if an accurate register, such as I have indicated, were to be seen at the Gardens. Such a register is kept of all the specimens received into the British Museum; and as it is made at the time, any inaccuracy must be occasioned by want of care on the part of the person who communicates the facts.

Dr. Sclater will perhaps allow me, as an original member of the Society, who has taken a great deal of interest in its management, to state that the history of the specimens was formerly much better recorded when the secretary of the Society was an honorary officer, and it could only have a claim to his leisure, than it is now when we have a liberally paid secretary with a number of paid subordinates under him.

I consider the above a sufficient answer to his note; but as his paper contains other observations, I will make a few further remarks.

Early in July there were brought to the Museum three species of tortoises to be named, as is the usual practice with animals of that class. They were particularly interesting to me, and I asked whence they came. On the 7th of July I sent to the Society a communication entitled "Notes on three Species of Tortoises living in the Society's Gardens," in which I stated that "there are at present living two species of land-tortoises and one of a more terrestrial Terrapin, which Mr. Bartlett assures me came direct from Chili." One would have thought that this statement would have exonerated me from the charge of giving a wrong habitat to these tortoises, as I received the account from a subordinate of Dr. Sclater, who, I was informed, was absent on the Continent. As the paper would not be read until its meeting in November, and as it contained a new species, I sent a short diagnosis of the species to the 'Annals,' that there might be no doubt as to the date of its publication, leaving the details of the paper to be read before the Society.

Near the end of October, happening to turn over the paper

of Dr. Strauch on the distribution of tortoises, I observed, under *Testudo sulcata*, that that species was said to be found in various parts of South America by D'Orbigny, Burmeister, and others, and I had no doubt that they had obtained the tortoise which I had described as *Testudo chilensis*. I sent a short note stating how I had obtained the information, for insertion in the November Number of the 'Annals' (see vol. vi. p. 428). At the same time I sent the synonyma, with references to the works in which they were described, to the Secretary of the Society, with a request that it should be added to my paper which was to be read on the 1st of November. And there can be no doubt that it was from the paper sent to the Secretary of the Zoological Society and to the 'Annals' that Dr. Sclater obtained all the information which appears in his paper in the 'Annals' for December. And thus it was that he found out that the "new Chilian tortoise" had been "known to four or five previous writers," who by-the-by confounded it with a species with which it has no alliance, the one being a typical Old-World tortoise, and the other belonging to a group peculiar to the New World, which Agassiz considers a very distinct genus, under the name of *Xerobates*.

Upon the day (Nov. 30) that I received the 'Annals' containing Dr. Sclater's paper, I received from Dr. Sclater the proof of my communication of the 7th of July; so that if Dr. Sclater was only urged by "the special interest which he takes in the correct determination of the animals kept in the Gardens of the Zoological Society of London," he had the opportunity of correcting the erroneous information according to his idea, which was sent to me by one of his subordinates, in the original paper, either by informing me of the right habitat and history of the tortoises, to insert in the paper, which I would have thankfully acknowledged; or he could have made the correction in the form of a note from himself, as editor of the 'Proceedings,' communicated under his own name.

Scientific men ought to be much indebted to Dr. Sclater for the trouble he has taken in writing to Dr. Peters, Dr. Philippi, and others respecting the habitat of this tortoise, a kind of labour which he seems only to undertake after I or some other person have described the species. Unfortunately my occupations are so multitudinous that I cannot devote so much time to the determination of the habitat of a single species which has so extensive a distribution in South America; but in this case the trouble seems to have been thrown away; for instead of having only negative evidence, we have positive facts within reach (and, indeed, the following statement given me by Dr. Günther,

which was communicated to Dr. Sclater at the meeting of the Zoological Society when the paper was read, and before Dr. Sclater's paper in the 'Annals' was put in type) proves that the tortoises were obtained near Santiago on the coast of Chili.

Dr. Günther states :—" Hr. Weisshaupt, who brought a collection of Chilian animals, stated that he was in the habit of collecting personally live specimens on or near the sea-shore, about twenty miles south of his place of residence, and that he obtained the tortoises brought by him on one of these excursions. He was asked by me to obtain more specimens, live or dead, together with lizards and frogs, which he may meet with at the same time. I mentioned this already at the meeting of the Zoological Society on November 1st."

These remarks apply equally well to the observations on *Ateles Bartlettii*. I have only to observe that I considered *Ateles variegatus* of Natterer, figured in Reichenbach's Atlas, figs. 15 & 16, to be the same as *Ateles melanocheirus* of Desmarest. But it is very difficult to make out the species of this genus from short descriptions, and I must leave the question to be settled by future zoologists; but I consider that I have done good service in figuring so fine a species—only remarking that it is the Secretary of the Society, and not I, that is responsible for the colouring of the plates, as they were not even submitted to my inspection before publication; but in this case it is very like the specimen: and Herr v. Pelzeln's observation shows that the *A. variegatus* of Natterer is a very variable species; for he says that in some specimens the yellow is continued over the upper surface of the limbs, of which there is not the slightest indication in the male which I described; and I could not procure from the Society any habitat for the female, which I am now informed came from the Hon. A. Gordon, who obtained it from the upper part of the Caura river, a southern confluent of the Orinoco.

In this case I am charged with two faults.

First. I have named as a new species a monkey which Dr. Sclater thinks was named and very briefly described thirty years ago, in a miserable compilation; but I do not think that he has proved his case: and surely he should not complain of a person giving a new name to a species already described; for in the very paper in which he makes the charge he has given a new name to a tortoise which I had described and named *T. chilensis*, because he has a theory, founded on negative evidence, that, though the specimen came from Santiago, it is not a native of Chili, and therefore he proposes to call it *T. argentina*, in case his theory should prove correct; and I think I have shown that there is no likelihood of the new name

being required. He has given the "temporary denomination" of *Canis lateralis* to a jackal which is evidently the *Canis adusta* of Sundevall; he is even doubtful of this case himself, but fears that he may lose the opportunity of naming a species. Again, if the monkey is really *Ateles variegatus* of Natterer, why did not Dr. Sclater make the requisite correction when I described and figured it in the 'Proceedings' of the Society in 1867? especially as he says it was described, in 1842, in a "most ordinary book of reference."

Secondly. I have done wrong because, having received the specimen of *Ateles*, which agrees in all respects with the specimen described as *A. Bartlettii*, except in being white where that species was yellow, I did not name it as a new species, but, finding that one specimen was a male and the other a female, I was willing to believe that they were sexes of the same species, or at least to wait to consider it otherwise until more specimens were submitted to my examination. Dr. Sclater says that it is not like the female at Vienna, and therefore it is not a female of *A. Bartlettii*. Even if it is not, may it not be a variety of that sex? At any rate, I am not willing to give another name, which Dr. Sclater is perfectly at liberty to do if he thinks it necessary.

This rage for giving names to doubtful species is the great bane of what is called zoology, and is destroying the scientific part of the study, reducing it to mere names instead of knowledge of the things, and is liable to all manner of abuses. Thus one of the royal princes brought home a deer from that general *entrepôt* Singapore, and presented it to the Gardens; and Dr. Sclater, in great haste (not even waiting until the horns had been properly developed), has briefly described and named it *Cervus Alfredi*, in a genus already overloaded with nominal species. A shell-dealer has a large number of specimens of Cones, evidently the young of much larger species, which have not yet arrived at their proper form or colouring, which are not saleable, and describes them and other abnormal specimens of common shells as new species, thus rendering them valuable in the eyes of some collectors, as being the types of species described in the 'Proceedings of the Zoological Society,' they conceiving that the Society thereby gives authority to the assertion of their being new species.

Some day, and I hope soon, such species must be erased from our lists, which they now uselessly encumber, or they will render the science unworthy of the name

Dr. Sclater objects that in my short notice of the species I simply say "received" by the British Museum. As a Fellow

of the Society, jealous of its scientific reputation, I thought it better than saying that "the British Museum has just purchased from the Zoological Society the dead body of an animal which was for some weeks living in their Gardens," which would have been the truthful statement; and it appears that Dr. Sclater was himself ashamed of this statement; for he says that it was "sent" to the British Museum, without saying that it was sent for its specific name to be determined, and for purchase. But all the animals which the Museum receives from the Zoological Society (established for the cultivation and extension of zoological science) are purchased; and when the Society was badly off for funds, this was a fair source of income, of which I do not complain.

III.—*Additional Evidence of the Structure of the Head in Ornithosaurs from the Cambridge Upper Greensand; being a Supplement to 'The Ornithosauria.'* By HARRY G. SEELEY, F.G.S., Assistant to Prof. Sedgwick in the Woodwardian Museum of the University of Cambridge*.

[Plates II. & III.]

To the anterior end of the snout and the back of the braincase belong nearly all the fragments of Pterodactylan skulls hitherto collected from the Cambridge Upper Greensand; and although the snouts are numerous, they never extend backward beyond the denticulate part of the palate or to the narial apertures; while the back part of the head never reaches so far forward as to include the frontal bones; so that the great middle region of the skull, the seat of the orbits and nares, which transforms its characters with successive groups in reptiles, mammals, and birds, remains unknown. And before the general structure of the head can be illustrated by detailed comparisons in this Cretaceous Ornithocheiroid family, we must learn the condition and form of the bones called frontal, nasal, lachrymal, maxillary, malar, vomer, palatine, pterygoid, postfrontal, and the proximal end of the os quadratum. And if one were a believer in the old morphological doctrine that a like conformation of bone in extinct and living animals warrants the presumption of their having had a like grade of organization, it were hard, with these Ornithosaurian snouts before us, and all the vertebrate province assembled, for us to seek their similars from, to pronounce a sure judg-

* Communicated by the Author, being the first part of a paper read before the Cambridge Philosophical Society, May 30, 1870.



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