

barrier of boulders, gravel, and sand, which has doubtless been heaped up by glacial action. At the north-eastern extremity this barrier is narrowed until it resembles an artificial embankment, and at this point a channel has apparently been cut for the purpose of supplying water power to the works situated immediately below. The actual stream of water forming the first source of the river Logen had a depth at the time of my visit of three feet, with a width of about six feet; it flowed through a rectangular channel, paved at the bottom and sides with large boulders, and sustained by timbers. Although these timbers are now nearly rotted away, it is evident that the channel had at some time or other been carefully formed. The water power is at present used for a saw-mill, but it was, no doubt, originally employed to furnish the blast for an old iron furnace, which has given the name of Lesje Jernværks to this place. The furnace has been abandoned, as I was informed, for the last eighty years, and from the dates upon the ironwork of a neighbouring house I think it likely that the works were erected at least 150 years ago, a length of time which would perhaps be sufficient to account for the natural appearance of the stream below the works.

I also examined the western exit of the lake with care. The first break in the level of the water occurs at a wooden bridge which slightly restrains the outflow. The stream flows strongly here, with a width in all of about 45 ft., a maximum depth of about 2 ft. 9 in. at the time of my visit, and an average depth of about 2 ft. After falling about 9 in. at this point, the river flows in a steady deep stream through a perfectly natural channel for about an English mile, with a very slight fall, after which its descent becomes gradually accelerated. I have no doubt that this considerable stream forms the natural outlet of the lake, but that a lowering of the water in the lake to the extent of three or four feet would stop this outflow altogether.

Now when we speak of a lake with two outfalls, I presume we mean one with two natural and permanent outfalls, and in this sense the Læsöskougens Vaud cannot be adduced as an instance at the present day. It is just possible that the lake had a natural outlet at Lesje Værks before the artificial channel was cut, but it is highly improbable, and we should require good traditional or documentary evidence to that effect before we could assume it to be so. Such evidence would probably be very difficult to obtain, and could only be obtained by some person intimate with the Norsk language. Moreover, I judge from the nature of the outfall at this end, that if it were not looked to from time to time, the stream would eventually widen and deepen the channel through the barrier of loose sand and gravel, and finally lower the level of the water by many feet, so as to destroy the outflow into the river Rauma.

I write the above without having previously entered into the subject, and without being able to refer to any information about it. On *à priori* grounds it seems very unlikely that there should exist any lake with two distinct outflows. For in order that such a state of things should exist permanently, either there must be no erosion of the channels whatever, or the erosion must proceed with exact equality, otherwise one stream will augment at the expense of the other, and its eroding power being thus increased, it will more and more tend to sap the supplies of the other stream. The condition of things would, in fact, be that of unstable equilibrium, which could not long continue to exist.

Colonel George Greenwood, who is, I presume, the same as the former active correspondent about this subject, visited this lake last summer, as appears from the entry of his name in the day books. I am not aware that he has since published any opinion, but the lake seems, so far as I can judge, to support his view of the matter.

W. STANLEY JEVONS

THE NEW BIRD OF PARADISE

AT the last scientific meeting of the Zoological Society of London for the past session, I had the pleasure of exhibiting and describing specimens of a new Bird of Paradise recently discovered by Signor Luigi Maria D'Albertis, in New Guinea. As it will be some time before the part of the Society's "Proceedings" containing the record of the business transacted at the meeting on June 17 can be issued, and as I am informed that some knowledge of the existence of this singular bird has been obtained in another quarter, I am anxious to secure to Signor D'Albertis the honour of his discovery by a somewhat earlier publication of such a description and figure as will enable the bird to be recognised by other naturalists.

*Drepanornis** *albertisi*, as I have proposed to call this fine bird, in honour of its energetic discoverer, belongs to the long-billed or Epimachine section of the Paradisææ, and is, perhaps, more nearly allied to *Epimachus* than to any other described form. But it is very distinct from *Epimachus* as regards its long, thin, and much curved bill, shorter legs, and shorter, squarer tail, not to speak of the peculiar tufts of feathers which are characteristic of the male sex only. The general colour of the plumage of the male *Drepanornis* is brown above, and lavender-grey below. The naked rim round the eye, and a bare space at the back of them on each side, are of a bright blue. On each side of the front before the eye rises a short tuft of bright, coppery, metallic green feathers. A large patch of similar scaly feathers covers the chin and throat. Two large tufts of feathers spring from each side of the breast, and form conspicuous ornaments when erected. The upper pair of these peculiar tufts have a mass of brilliant coppery red at the base of their feathers, terminated by a dark band. This metallic colour is only exposed when the plumes are raised. The lower pair of tufts, which are much lengthened, and in a state of repose reach beyond the lower third of the tail, are margined by a splendid purple band. The lower part of the breast is likewise crossed by a narrow band of bright green. The middle of the belly and vent are white, the tail of a nearly uniform pale chestnut.

The above description will give some idea of the special peculiarities of the male *Drepanornis* in full plumage. The female, as is the case in all the true Paradisææ, is very different in colour, though alike in form. Her plumage is above of a nearly uniform bright brown or rufous, below paler, and crossed on the throat, breast, and sides of the belly, by numerous small irregular black wide cross-bars. The naked space round and behind the eye is coloured bright blue, as in the full-plumaged male. The beak, in the single specimen sent, is still longer than in the male, but this may be an individual peculiarity. The whole length of the male *Drepanornis*, from the tip of the bill to the end of the tail, is about 14 in., that of the wing, from the carpal joint, 6 in., of the tail, from the base, 5½ in., the outer tail feathers being about 1 in. shorter than the middle pair. The bill measures 3¼ in. from the front along the curvature, the tarsus 1¼ in.

The figure of the *Drepanornis* herewith given is reduced from the lithograph prepared for the "Proceedings" of the Zoological Society, which will form the 47th plate of the volume for 1873, and will be published as soon as the second part is ready.

Signor D'Albertis obtained his examples of this remarkable bird during his recent excursion into the interior of New Guinea, at a place called Atam, which is situated at an elevation of about 3,500 feet above the sea-level in the Arfak mountains. In an account of his journey

* The name originally given at the Zoological Society's meeting of June 17 was *Drepanophorus* (*ἰσχυροὶ*) *salceni* *generis*. (See NATURE, viii. p. 195.) But this term having been previously applied by Sir Philip Egerton to a genus of fossil fishes, I proposed (NATURE, viii. p. 192) to convert the bird's name into *Drepanornis* (*ὀρθοὶν* *salx* et *ὄρνις*).—P.L.S.

recently published in the *Sydney Mail*, he speaks thus of the present species:—

“Among other birds obtained at Atam, I may mention a new species of Bird of Paradise-bird which perhaps may even prove to be of a new genus. I secured only a male and female, which have been transmitted to the Zoological Society of London by the last April mail steamer, and they are unique specimens. It is evidently a very rare bird, for many of the natives did not know it, but others called it *Quamz*. The peculiarity of this bird consists in the formation of the bill, and the softness of the plumage. At first it does not appear to have the beauty usually seen in the birds of this group, but when more closely observed, and under a strong light, the plumage is seen to be both rich and brilliant. The feathers that arise from the base of the bill are of a metallic green and of a red-

dish copper-colour; the feathers of the breast, when laid quite smooth, are of a violet-grey, but when raised, form a semicircle round the body, reflecting a rich golden colour. Other violet-grey feathers arise from the flanks, edged by a rich metallic violet tint; but when the plumage is entirely expanded, the bird appears as if it had formed two semicircles around itself, and is certainly a very handsome bird. Above the tail and wings the feathers are yellowish, underneath they are of a darker shade. The head is barely covered with small round feathers, which are rather deficient behind the ears; the shoulders are of a tobacco-colour, and underneath the throat of a black blending into olive colour; the feathers of the breast are violet-grey, banded by a line of olive, and those of the vent white. The bill is black, eyes chestnut, and the feet of a dark leaden colour. The



The new Bird of Paradise, Drepanornis Albertis. Upper figure, Male; lower figure, Female.

food of this bird is not yet known, nothing having been found in the stomachs of those I prepared but clear water.”

Besides this Paradise-bird, M. D'Albertis procured from the natives, in the vicinity of Orangeri Bay, on the western coast of New Guinea, opposite to Salawatty, two imperfect skins of a second apparently new species. This is a true Paradisea, nearly allied to the Greater and Lesser Birds of Paradise (*P. apoda* and *P. papuana*), but having the long lateral plumes more of an orange-red, as in *P. rubra*. These skins were likewise exhibited at the Zoological Society's meeting on June 17 last, and the species, in accordance with M. D'Albertis' wishes, was proposed to be called *Paradisea raggiana*, after the Marquis Raggi.

As the collection of birds which contained these two new Paradise-birds only reached me on the morning of the same day as the meeting of the Society, it was not possible to make an accurate examination of all of them before the meeting, and the two Paradise-birds, being the most remarkable among the novelties, were alone described. But I have now had time to examine the whole series carefully, and find that it contains 70 specimens referable to 53 species. Twelve of these (besides the two Paradise-birds) appear to be new to Science, and will be described and named at the first meeting of the Zoological Society in the autumnal session. Besides these novelties there are examples of several other birds recently described by Dr. Schlegel from Rosenberg's collections, and of other rare species.

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