respect the fossil differs from the recent sturgeon in having a shorter and deeper trunk, in the greater vertical expanse and wider divergence of the lobes of the caudal fin, in the median position of the dorsal fin, and in the absence of dermal plates on the back, belly, and flanks. Before describing the cranial anatomy, the author points out certain homologies between the head-plates of the recent sturgeon and the epicranial bones of the teleostean fishes, more especially with reference to the parietals, mastoids and frontals ; and explains that these conclusions have resulted from the examination of the inner table of the skull, where the relative position and proportions of the component plates are constant, however much the outer or dermal layer may vary.

The remainder of the memoir is devoted to detailed descriptions of such parts as are preserved in the several specimens ; and the author concludes by stating as the result of his investigations, that Professor Agassiz was right in referring the liassic fish to the Sturionidæ ; that in some respects it evidenced a transitional form between the latter family and the more typical ganoids ; that its food was similar to that of the existing members of the family, but that it was procured in a tranquil sea, rather than in the tumultuous waters frequented by sturgeons of the present time.

ZOOLOGICAL SOCIETY.

February 9, 1858.—Dr. Gray, F.R.S., V.P., in the Chair.

On a New Genus of Mytilidæ, and on some Distorted Forms which occur among Bivalve Shells. By Dr. J. E. Gray, F.R.S., V.P.Z.S.

We have for several years had some specimens of large *Mytilidæ* in the Museum Collection which I have always regarded as the types of a distinct genus, but have deferred from time to time their publication, as I was informed that Dr. Dunker and others were engaged on a monograph of the family. Dr. Dunker having described the species without forming it into a group, I have therefore brought it before the Society, and at the same time make some observations on a peculiarity which the species presents.

Stavelia, n. g.

Shell inequivalve, inequilateral, subtrigonal ; umbo anterior ; the front of the ventral edge sinuous, the flatter valve with a broad expanded lobe on the front of the ventral margin, the more convex one with a deep sinuosity to fit the lobe of the other valve. Anterior adductor scar distinct, oblong ; posterior roundish ; submarginal scar parallel to the edge of the shell, entire. Hinge toothless. Ligament and cartilage linear, marginal, rather short.

Periostraca laminate, with elongated flat linear or tapering processes.

This genus differs from *Mytilus* in the inequality of the valve and

the sinuosity of the lower edge, in the entire absence of any small teeth under the umbo, and in the paleaceous periostraca.

1. STAVELIA TORTA.

Mytilus tortus et *M. horridus*, Dunker, Proc. Zool. Soc. 1856; Reeve, Conch. Icon. t. 3. f. 6 & 9.

Hab. North Australia and Philippines.

I cannot discover any permanent character between the two specimens described by Dr. Dunker.

The specimens of this genus in the Museum, and others which have come under my observation, offer a peculiarity which I have hitherto only observed in a very few other bivalve shells, and in none to the extent which is presented in this species.

In my paper "On the Formation and Structure of Shells," in the 'Philosophical Transactions' for 1833 (reprinted by Dr. Johnston, 'Letters on Conchology,' p. 413), I observe,—

"In some very rare instances the shells (bivalves) are also reversed; but the fact is not easily observed except in the unequal-valved kinds. There were formerly in the Tankerville collection two specimens of *Lucina Childreni*, in one of which the right valve was a dextral shell, in opposition to the general structure. These specimens are now in the British Museum Collection."

The four specimens of this shell which I have under my eye present the same anomaly as the two specimens of *Lucina Childreni* above referred to, that is to say, two of them have the left valve the flattest and furnished with the large lobe on the front of the ventral margin, and in the other two it is the right valve which has this form and development; and I cannot observe any other peculiarity in the specimens except this indifference between the development of the sides of the animal. So that, as in *Lucina Childreni*, it is impossible to determine which is the normal form of the species. A somewhat similar indifference as to the direction of the shell is to be observed in some land univalve shells, as *Bulimus aureus*, where the shell appears to be indifferently dextral and sinistral; but in the genus *Stavelia* it appears more extraordinary on account of the great difference of the form of the two valves.

We have just received from China a large species of *Muteladæ*, allied to *Unio Grayii* of Lea, (which I do not name, as Mr. Cuming informs me that Mr. Isaac Lea is describing and figuring it in Philadelphia*), which offers a curious peculiarity.

These shells have the hinder extremity twisted up on one side somewhat like *Arca tortuosa*, but not so regularly; and unlike that species, the flexure is not always in the same direction: some have the bend towards the right, and the others towards the left of the animal.

I may observe, that, as far as I have been able to examine, the side seems a matter of indifference, for as many of the specimens are bent to the one side as the other.

* *Triquetra lanceolata* seu *contorta*, Lea.

It is to be observed that in *Arca tortuosa* and *A. semitorta* the hinge-line is always straight, and it is only the basal line which is bent to one side, the valves being slightly unequal, and in fact the shell is not distorted ; while in the *Hyria* under consideration the upper edge of the shell is bent as well as the lower one, and the shell is truly altered in form by some external circumstance.

The shells appear as if they had been softened and suddenly twisted on one side. It has been suggested that this change in the form may be produced by the position which the shell occupies in the mud or under the stones near which it lives ; but it is to be observed that *Uniones* generally live sunk in the mud, and not lying on one side, and that, like shells which live in an erect position, they have equal valves, while those that live lying on their side almost always have unequal ones ; and if the form depended on this circumstance, as the animal must sometimes move and must be sometimes turned over, we ought to find some specimens with the flexure partly on one side and partly on the other, but no such specimens have occurred to me.

I am inclined to believe that it arises from some peculiar predilection of the animal itself, by which it probably more easily obtains its food in the peculiar situation in which it resides.

These shells were sent to England from China by one of Mr. Fortune's collectors. They were accompanied by some specimens of reptiles and insects, on which the Chinese collectors had been exercising their ingenuity in hopes of adding to their value. Thus there was a stuffed specimen of a Night Lizard (*Geeko Reevesii*) which had a square tuft of hair from some mammal stuck on the back of its neck.

A Snake, which had the claw of a mammal surrounded with fur inserted on each side of its neck just behind the head, so as to make it appear as if it had rudimentary feet armed with large claws.

Several of the Coleopterous insects, especially the larger *Cerambyces*, were painted, so as to give them quite a different appearance from the usual and natural colour of the species.

I may add that the work was so coarsely executed as to be discovered on the most cursory examination of the specimens, and could only have been intended to deceive the most ignorant collectors.

Observations on the Genus Nerita and its Operculum. By Dr. J. E. Gray, F.R.S., V.P.Z.S., etc.

The distinction of the species of this genus is rather difficult ; therefore whatever assists in dividing the species into smaller groups is of use, as limiting the number of species between which any doubt can be entertained.

Considerable confidence has therefore been placed in the form of the surface of the inner lip, which in some species is smooth, in others tubercular or ridged, or both ridged and tubercular ; but in examining a large series of specimens from the same locality, though the character is generally permanent, the tubercles or ridges

vary considerably in number and size, and are sometimes almost entirely wanting. It is to be observed that in many of the species which have this part tubercular, the tubercles are more distinct and crowded in the younger, and especially the youngest, than in the older, or what is usually called the more perfectly developed state of the species. In other genera such characters are generally more developed in the shells formed in the most perfect state of the animal. Mr. Adams has founded subgenera on characters furnished by the surface of the inner lip.

My studies on Mollusca have proved to me that few parts offer more important and better characters for the separation of the families, genera and species, than the operculum. This has been illustrated in the family *Neritidæ*.

The family is well characterized by the form of this part, and the possession of the internal apophysis or shelly lobe under the nucleus, forming a kind of hinge on the sharp inner lip of the shell.

In my paper in the 'Philosophical Transactions' for 1833, I stated that the structure of the operculum offered the best character to separate the *Neritæ* from the *Neritinæ*, and I there observed, "The operculum of *Nerita* agrees in form with that of *Neritina*, but differs in having no cartilage on its edge, which is furnished instead with a groove in its outer surface, being covered with a thick, variously formed shelly deposit as in the genus *Turbo*, and in its inner surface being lined with a thick, callous, polished coat. Between the outer and inner coat there exists a very distinct concentrically striated horny layer, like the operculum of *Littorina*, and the left muscular scar is deeply grooved like that of the subannular operculum.

"This difference in the structure of their opercula forms an excellent distinctive character between these two genera."

In the same paper I observed, "The difference in the outer surface of the opercula of the genus *Nerita* affords a good character for the separation of the species."

I have lately had an opportunity of examining a large number of freshly collected *Nerites*, with their opercula dried in the mouth of the shell, so that there can be no doubt that they are the real opercula of the species, and that these opercula have not been put into the mouths of the shells at random, as is too often the case with shells which have passed through the hands of dealers *.

The species may be divided according to their opercula as follows:—

1. *Operculum polished, with a broad, slightly raised, concentrically grooved, submarginal band.* Nerita.

N. polita. Costal grooves arched (fig. 1).
N. lineolata. Costal grooves straight (fig. 2).

* In Adams's Genera of Shells, t. 42. f. 1, *a*, *b*, a granular operculum, probably that of *N. signata*, is figured as that of *Nerita polita*.

2. *Operculum polished, with a broad, slightly raised, granulated, submarginal band.* Ritena.

N. plicata (fig. 3).

The specimens vary slightly in the distinctness, and especially in the breadth, of the tubercular submarginal band.

3. *Operculum with a broad, raised, convex, smooth, submarginal band.* Tenare.

* *Operculum smooth.*

N. Peloronta (fig. 5).

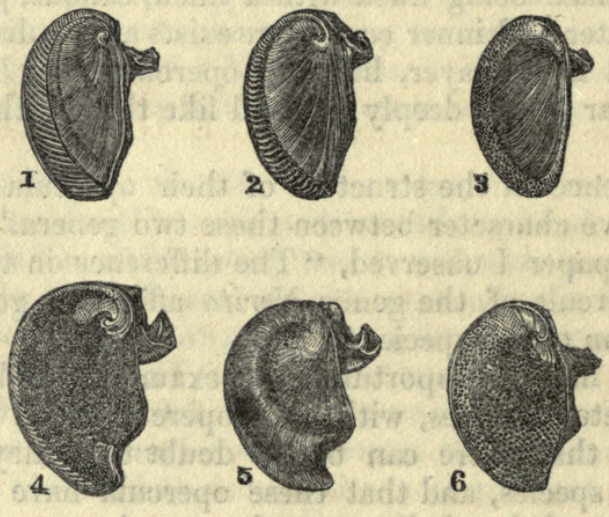
** *Operculum granular.*

N. ornata (fig. 4). The younger shells have the inner lip more granular, and the adult more ridged.

4. *Operculum uniform, granular, without any raised or distinct submarginal band.* Natere.

* *Inner lip granulated.*

N. exuvia.
N. Malaccensis.
N. albicilla (fig. 6).
N. Senegalensis.



1. Nerita polita. 2. N. lineolata. 3. N. plicata.
4. N. ornata. 5. N. Peloronta. 6. N. albicilla.

** *Inner lip ridged.*

N. variabilis.
N. Chamæleon.
N. versicolor.
N. tessellata.

*** *Inner lip smooth.*

N. signata. The granules large, in lines.
N. atra.
N. inconspicua.

The *Puperita pupa*, from the West Indian Seas, has an oper-

culum of a single coat, with a polished surface like *Neritina*. This genus, in the 'Guide to the Mollusca in the British Museum,' is by mistake put in the same section as *Nerita*, instead of that of *Neritina* (see p. 137).

February 23, 1858.—Dr. Gray, F.R.S., V.P., in the Chair.

Note on the Skeleton of the Sheath-bill (Chionis alba). By T. C. Eyton, Esq., F.L.S.

The general appearance of this skeleton is similar to that of the Plovers; the fissures on the posterior part of the sternum are, however, not quite so deep in proportion to its length, nor is the keel so broad, but its form is very similar, and distinct from that of other grallatorial birds. It differs from *Thinochorus* (with which I at first thought it might be allied) in having two fissures in the posterior margin of the sternum, *Thinochorus* having but one. On comparing the skeleton with some portion of the skeleton of *Glareola pratincola*, the bones are almost identical in form, particularly the sternum, head and pelvis. I should therefore be inclined to place *Chionis* and *Glareola* in the same family.

Mr. G. R. Gray arranges this form along with the *Thinochorinæ* in his order '*Gallinæ*;' Prince Bonaparte, in his 'Conspectus Systematis Ornithologiæ' (1854), places it next to the Gulls, in the order '*Gaviæ*.'

Observations on the Genus Cuscus, with the Description of a New Species. By Dr. J. E. Gray, F.R.S., V.P.Z.S., Pres. Ent. Soc., etc.

Mr. Wallace having sent two specimens of this genus to the British Museum, to determine them I went over the previous observations on the genus, and examined the numerous specimens which are in the Museum collection, received from the French voyages of discovery, Mr. J. Macgillivray, the Naturalist of H.M. Ship 'Rattlesnake,' and those now sent from the Island of Ula; and I have come to the belief that they are all to be referred to four species, which are very variable in the colour of the fur; one variable in both the sexes; another, in which the sexes differ greatly from each other, but appear to be permanent in their colour; one species in which the fur of the two sexes is alike and uniform in colour; and one, of which the female sex only is known, which is uniform iron-grey.

The two have the ears small, hairy on both sides, and hidden in the fur; the other two have larger ears, exposed beyond the fur and bald within.

M. Temminck, in the first volume of the 'Monographies de Mammologie,' published in 1827, divides the short hairy-eared kinds into three species.

At the time he wrote he only had specimens from the northern part of Celebes, brought home by Professor Reinhardt, and from the islands of Banda and Amboyna.

The species evidently depend principally on the colour of the fur, which appears to be very variable in different individuals. It is true that he describes and figures skulls of the different individuals; but the difference between those of *Phalangista chrysorrhos* and *P. maculata* appears chiefly to depend on the age and development of the specimens figured. M. Temminck and the writers of his school always forget that the skull and other parts of the skeleton are liable to quite as much variation from local circumstances, food, and other accidental causes, as the colour of the fur or the size of the animal.

1. In *Phalangista ursina* the fur is thicker and closer, and the long hairs thicker than in the other species, blackish, with yellow tips to the longer hairs; and the forehead of the skull is flat. Of this he had several specimens of different ages, all brought by Professor Reinhardt from the northern part of Celebes, the natives of which have not observed any varieties in colouring.

2. *P. chrysorrhos* is described from two specimens brought home by the same Professor, from some of the Moluccas, which have a short cottony fur, of an ash-grey more or less black, and the rump and upper part of the base of the tail golden-yellow.

3. Of *P. maculata* Temminck particularly observes, that the fur in all ages and in both sexes is covered with irregular white or brown spots, which are paler and less marked in the young. The very young are sometimes entirely ashy. They come from Banda and Amboyna.

The yellow colour of the rump and the base of the tail, as far as the specimens in the British Museum show, is common to the ashy specimens, which might be called *P. chrysorrhos*, and the variegated specimens, which might be named *P. maculata*: it is very difficult to distinguish the pale-rumped ashy ones from those without that mark; but it is easy to connect the grey or ashy spotted ones with either the one or the other; and it is impossible to separate the ashy-grey spotted ones from the brown or orange spotted specimens. In one specimen the animal is nearly white, with some small dark spots about an inch over; and in another the animal is white, with red feet, and one large red spot on the middle of the back.

From the examination of the specimens in the British Museum, and of their skulls, I am inclined to believe that the *P. ursina* is distinct, and that *P. chrysorrhos* and *P. maculata* are varieties of the same species.

1. Cuscus maculatus.

Ears almost hidden in the fur, clothed internally and externally with fur; forehead convex; forehead of the skull convex and rounded in front; grinders moderate; fur ashy-grey, or white and grey, or reddish, varied or spotted. Rump and base of the tail yellowish-white.

Phalanger, male, Buffon, H. N. xiii. t. 11.

Phalangista maculata, Desm. N. D. H. N. xxv. 472; Temm.

Monog. i. 14. t. 3. f. 1–6; Quoy & Gaim. Voy. Uran. Zool. 59. t. 7; Waterh. Mamm. i. 274. f. .

Phalangista ursina, part., Waterh. Mamm. 267.

Phalangista chrysorrhos, Temm. Monog. i. 12; Waterh. Mamm. i. 271.

Cuscus maculatus, Lesson & Garnot, Voy. Coq. Zool. 150. t. 4.

Cuscus macrourus, Lesson & Garnot, Voy. Coq. Zool. i. 156. t. 5; Waterhouse, Mamm. i. 277.

Hab. New Guinea.

Chrysorrhos would perhaps be the better name for this species, because all I have seen have the rump and base of the tail yellow, whilst some are not spotted.

Of this species we have in the British Museum—

1. Adult female, from the Moluccas, from the Leyden Museum, sent as *C. chrysorrhos*. Uniform ashy-grey; face, throat, chest, and beneath the rump and base of the tail yellowish.

2. Young female, from the south coast of New Guinea. Presented by J. B. Jukes, Esq. Dark blackish-ashy; head, neck and shoulders paler; rump and base of the tail reddish-yellow; cheeks, throat and beneath white; feet bright red.

The two sides of this specimen are not coloured alike. The forehead of the *skull* is very convex.

3. Half-grown "male from Darnley Island, brought from the south coast of New Guinea." Presented by J. Macgillivray, Esq. Reddish; back and thighs darker blackish-ashy; cheeks, throat, under side, large confluent spots on the sides, the rump and tail white; feet bright red. Like *Cuscus maculatus*, Quoy and Gaimard, Voy. Uranie, t. 7.

4. Half-grown "male from New Guinea." Presented by J. Macgillivray, Esq. Like the former, but white, with irregular large symmetrical pale reddish spots on body, limbs and tail.

5. Half-grown "female from Dufaure Island, south coast of New Guinea." Presented by John Macgillivray, Esq. Like the former, but white, with one very large reddish spot on the hinder part of the back; two large spots on the hind legs, and an obscured indication of a large patch on the shoulders; the feet red.

6. Half-grown, from the "island of Waygeroo." From M. Verreaux. Ashy-grey cheeks; back with some white spots; throat, chest, belly, rump and tail white; sides white, with scattered, round, nearly equal-sized spots; feet reddish.

7. Adult male. Aru Island. Sent by Mr. Wallace. White; body and limbs with small, roundish, rarely confluent, blackish-ashy spots; feet white: the skull has a very convex forehead.

Cuscus maculatus, Lesson, Voy. Coq. t. 4, is intermediate in colour and marking between Nos. 7 and 3.

Cuscus macrourus, Lesson, Voy. Coq. t. 5, from the island of

Waygeroo, bears a great similarity to No. 3; but the reddish spots are less confluent.

The figure of *C. Quoyi*, in Quoy and Gaimard, Voy. Uranie, t. 6, looks like a specimen of this species intermediate between the ashy and spotted variety, being ashy with darker obscure spots.

2. Cuscus brevicaudatus.

The ears hid in the fur, woolly internally and externally; tail short; the forehead ——-?; the front lower cutting-teeth broad.

Female uniform ashy-grey; rump and base of tail, throat, chest and belly yellowish dirty-white.

Phalangista nudicaudata, Gould, Proc. Zool. Soc. 1849, 110.

Hab. Cape York.

This species is only known by "a female two-thirds grown, sent from Cape York" to the British Museum by John Macgillivray, Esq.

It is very like the ashy variety of *C. maculatus*, but the front lower cutting-teeth are much broader, and the tail, which has the bones still remaining on it, is considerably shorter than any of our specimens of *C. maculatus*.

The specimen in the British Museum is that described by Mr. Gould.

Mr. Gould refers this animal to the subgenus *Pseudocheirus* of the genus *Phalangista*, and calls it *P. nudicaudata*, because it "differs from all the other Australian members of the genus in having the apical three-fourths of its tail entirely destitute of hair." But Mr. Gould overlooked the fact that it is not a *Pseudocheirus*, but a *Cuscus*, all the species of which have the major part of the tail naked; and the species under consideration has the naked part of the tail, and indeed the tail itself, shorter than the rest of the species; so that the specific name of *nudicaudata* is singularly inapplicable.

The light mark on the rump, which Mr. Gould compared to that of the *Koala*, is also common to the species of *Cuscus*, and is probably produced by the habit of the animal sitting on its rump, rolled up into a ball, on the fork of the branches of trees.

The skull shows that the animal is much younger than the label indicates, as it appears only to have the milk teeth, and the broad lower incisors of the younger specimens of this genus. The skull differs both from that of *C. ursinus* and *C. maculatus*, but it is too young to predict what may be the normal form of the adult animal.

The front half of the space between the eyes is rather convex, but not nearly so much so as the young skull of *C. maculatus*; and the front of the forehead just behind the convexity described is rather concave; this concavity has no resemblance to the deep concavity occupying nearly the whole space between the eyes in *C. ursinus* and *C. maculatus*.

3. Cuscus ursinus.

Ears almost hidden in the fur, clothed with fur internally and externally; fur blackish-ash, with larger silvery hairs; head, throat

belly and tail rather pale brown; forehead flat, concave; forehead of the skull flat, deeply concave; grinders large, in a strongly-arched series.

Phalangista (*Ceonix*) *ursina*, Temm. Monog. i. 10. t. 1. f. 1–3; t. 2. f. 1–5, skull; t. 3, skeleton; Lesson, Cent. Zool. t. 10; Waterhouse, Mamm. i. 267, part.

Hab. Celebes.

We have in the British Museum only a single specimen of this species with its skull, which was obtained from the Zoological Society, and is the specimen described by Mr. Waterhouse in his Natural History of the Mammalia, i. p. 268. The other specimen there indicated as being in the British Museum is a young *C. maculatus*.

In Lesson's figure in Cent. Zool. t. 10, it is represented as uniform blackish-brown, with rather large white-edged ears!

The larger size of the teeth and the flatness of the forehead at once separate this from *C. maculatus*.

4. Cuscus orientalis.

Ears produced beyond the fur, naked internally; forehead concave. Male white. Female pale reddish-brown, with a darker longitudinal streak; skull with a narrow concave forehead; grinders moderate.

♀ ♂ *Phalangista cavifrons*, Temm. Monog. i. 17.

♀ ♂ *Cuscus orientalis*, Gray, List Mamm. B.M. 84.

♀ ♂ *Phalangista* (*Cuscus*) *orientalis*, Waterh. Mamm. i. 279.

♂ *Coescoes*, Valentyn, Omst. in Amboyna, iii. 272.

Phalanger, Penn. Quadr. ii. 27.

♂ *Didelphis orientalis*, Pallas, Misc. Zool. 9; Schreb. Saugth. iii. 550. t. 152.

♂ *Cuscus Amboinensis*, Lacép.

♂ *Phalangista alba*, Geoff. Cat. Mus.

♂ *Cuscus albus*, Lesson & Garnot, Voy. Coq. Zool. i. 158. t. 6.

♂ *Balantia orientalis*, Illiger, Prodr. 78.

♀ *Phalangista rufa*, Geoff. Cat. Mus.; Desm. N. D. H. N. xxv. 473.

♀ *Phalanger*, female, Buffon, H. N. xiii. t. 10.

Cuscus Quoyii, Lesson, Mamm. 226.

Phalangista Quoyi, Quoy & Gaim. Voy. Uranie, Zool. 58. t. 6??; Temm. Mon. Mamm. i. 17.

Phalangista Papuensis, Desm. Mamm. Supp. ii. 541; Bull. Sci. Nat. iii. 64.

Phalangista (*Cuscus*) *maculata*, part., Waterhouse, Mamm. i. 275.

? *Cuscus albus*, Lesson, Voy. Coq. t. 6, ♂?

Of this species we have in the British Museum—

1. Adult male, from New Ireland, procured from M. Verreaux of Paris; said to have come from one of the expeditions. Pure white; throat yellow; feet nearly bald.

2. A nearly adult male, from the old collection, said to have come from Amboyna. White.

3. Young male? Uniform pale brownish-yellow; throat, chest and belly whiter. From the island of Waygeroo; procured from M. Verreaux of Paris.

4. Adult female. Ashy-brown, glistened with silvery; throat, chest and belly pure white; back with a narrow uniform longitudinal streak. This is sent as *Cuscus Quoyii*, Lesson, Mamm. 220; *Ph. Papuensis* of Desmarest, Supp. The figure of M. Gaimard's animal in the 'Voyage of the Uranie,' t. 6, is more like a variety of *C. ursinus*; but the description agrees with our animal.

5. Young female, from the island of Waygeroo; procured from M. Verreaux.

6. Young female, from Aru Islands; procured from Mr. A. R. Wallace. These two only differ from the adult specimen in the silvery hairs of the back being rather more abundant, but they seem to be deciduous.

Phalangista Papuensis of Desm. was described from a female specimen collected by M. Gaimard, which was afterwards described as *Ph. Quoyi*. In Quoy and Gaimard, 'Zoology to the Voyage of the Uranie,' it is described as having a darker dorsal line, which rather widens over the loins, which at once shows that it must be the female of *P. orientalis*.

Mr. Waterhouse has referred both these names without any comment as a synonym of *P. maculata*, misled probably by Temminck, who (Mon. Mamm. i. 18) states them to be the young of *P. maculata*—evidently overlooking the dorsal stripe.

Lesson, in the 'Voyage of the Coquille,' figures a male animal as *Cuscus albus*, t. 6, from Port Praslin, New Ireland; it is white, with a narrow black streak, just as in the female of this species.

Knowing the little authority that is often to be placed on M. Lesson's figures, I suspect it is the figure of a pale or perhaps bleached specimen of a female *P. orientalis*, in which some fold of the pouch, probably produced by bad stuffing, has been mistaken by the artist for the scrotum of a male.

5. Cuscus Celebensis.

Ears produced beyond the fur, naked internally. Male and female alike, ashy-grey, grizzled with silvery hairs; the nape and the upper part of the middle of the back blacker, but without any distinct dorsal streak.

Cuscus Celebensis, Brit. Mus.
Hab. Celebes.

We have of the species—

1. Young animal, from the island of Macassar; procured from Mr. A. R. Wallace in 1851.

2. Adult male and female, from San Cristoval, Soloman Group of Islands, Dec. 1855. Presented by John Macgillivray, Esq. and F. M. Rayner, Esq. in 1856.

GEOLOGICAL SOCIETY.

March 10, 1858.—Prof. Phillips, President, in the Chair.

"Notes on some Outline-drawings and Photographs of the Skull of *Zygomaturus trilobus*, Macleay, from Australia." By Prof. Owen, F.R.S., F.G.S.

About a month since Prof. Owen received from Sir R. Murchison seven photographs, three of which are stereoscopic, of perhaps the most extraordinary Mammalian fossil yet discovered in Australia.

These photographs, with a brief printed notice of their subject by William Sharp Macleay, Esq., F.L.S., and some MS. notes by J. D. Macdonald, M.D., R.N., had been transmitted to Sir R. Murchison by His Excellency Governor Sir W. Denison, from Sydney, New South Wales; and by desire of Sir Roderick the Professor brought the subject under the notice of the Geological Society of London, to whom Sir Roderick desires to present the photographs on the part of His Excellency Sir W. Denison.

Professor Owen had some weeks previously received from George Bennett, Esq., F.L.S., of Sydney, outlines of the same fossil skull, made by him on the reception of the specimen by the authorities of the Australian Museum at that town; and the Professor had penned notes of his comparisons of these sketches before receiving the photographs and descriptions of the fossil skull from Sir R. I. Murchison.

This unique and extraordinary skull of a probably extinct Mammal, together with other bones, but without its lower jaw, were found at King's Creek, Darling Downs,—the same locality whence the entire skull and other remains of the *Diprotodon* have been obtained.

Mr. Macleay has described the fossil under notice as belonging to a marsupial animal, probably as large as an Ox, bearing a near approach to, but differing generically from, *Diprotodon*. He has named it *Zygomaturus trilobus*. The skull has transversely ridged molars, and a long process descending from the zygomatic arch, as in the *Megatherium* and *Diprotodon*, and exhibits an extraordinary width of the zygomatic arches. The skull at its broadest part, across the zygomata, is 15 inches wide, and is 18 inches long. In *Diprotodon* the skull is about 3 feet long by 1 foot 8 inches broad: so that while the latter must have had a face somewhat like that of the Kangaroo, the *Zygomaturus* more resembled the Wombat in the face and head.

Prof. Owen stated that, from the evidences afforded by the photographs, he finds the dentition of this upper jaw to consist of three incisors and five molars on each side, of which the first appears to be a premolar and the rest true molars, *i. e.*, $i.\frac{3-3}{}$, $c.\frac{0-0}{}$, $p.\frac{1-1}{}$, $m.\frac{4-4}{}$; agreeing, in this formula, with *Macropus* and *Diprotodon*. The mo-