

## A P P E N D I X.

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### DESCRIPTION OF SOME NEW AUSTRALIAN ANIMALS.

By J. E. GRAY, Esq., F.R.S.

I. It was formerly believed, that all the Mammalia inhabiting the Australian continent, but the wild dog, were marsupial; but as the natural history of the country is better known, we are becoming acquainted with nearly as many native non-marsupial beasts as there are marsupial; but they are certainly, generally, of a small size, such as bats, mice, &c., as compared to the kangaroos and other marsupial genera.

Some years ago, in the Proceedings of the Geological Society, (iii. 52.) I described a species of *Rhinolophus*, from Moreton Bay, which was peculiar for the large size of its ears, hence named *R. megaphyllus*; the one now about to be described, which was found flying near the hospital at Port Essington, by Dr. Sibbald, R.N., is as peculiar for the brightness and beauty of its colour, the male being nearly as bright an orange as the Cock of the rock (*Rupicola*) of South America.

*The Orange Horse-shoe Bat, (Rhinolophus aurantius.)*  
t. 1. f. 1.—Ears moderate, naked, rather pointed at the end; nose-leaf large, central process small, scarcely lobed, blunt at the top; fur elongate, soft, bright orange, the hairs of the back with short brown tips, of the under side rather paler, of the face rather darker; female pale yellow, with brown tips to the hair of the upper parts.

Inhab. Port Essington, near the Hospital, Dr. Sibbald, R.N.

The membranes are brown, nakedish; the tail is rather produced beyond the membrane at the tip; the feet are small, and quite free from the wings.

	<i>Male.</i>	<i>Female.</i>
The length of the body and head	1.10	1.10
„ fore-arm bone	1.11	1.10
„ shin-bone	8	8
„ ankle and foot	4	4

II. In Captain Grey's Travels in Western Australia I gave a list of the different species of Reptiles and Amphibia found in Australia. Since that period the British Museum has received from the different travellers various other species from that country. The lizards have been described in the catalogue of the Museum collection, recently published, and are being figured in the zoology of H.M.S. Erebus and Terror. Two of the most interesting specimens lately received, belong to a new genus of frogs which appear to be peculiar to Australia, which I shall now proceed to describe:—

Genus PERIALIA. Fam. *Ranidæ*.—Tongue nearly circular, entire; palate concave, with two groups of palatine teeth between the orifices of the internal nostrils; jaw toothed; head smooth, high on the side; mouth large; eyes convex, swollen above, tympanum scarcely visible; back rather convex, high on the sides; skin smooth, not porous; limbs rather short; toes 4.5, tapering to a point, nearly free, the palms with roundish tubercles beneath; the fourth hind toe elongate, the rest rather short; the ankle with an oblong, compressed, horny, sharp-edged tubercle on the inner side at the base of the inner toe; the male with an internal vocal sac under the throat.

This genus agrees with *Sciaphos*, *Pyxicephalus*, and

*Pelolates*, in having a large, sharp-edged tubercle on the inner edge of the ankle, but it differs from them at first sight, by the head and body being compressed and high, the mouth very large, and the eyes convex on the side of the forehead.

*Perialia Eyrei*, t. 2. f. 3.—Olive, sides of the face, and body blackish brown; face varies with white streak; the sides of body marbled with unequal white spots; limbs brown and white marbled; under side of the body whitish.

Inhab. Australia, on the banks of the river Murray.

*Perialia? ornata*, t. 2. f. 2.—Pale grey, back and sides, marbled with symmetrical dark-edged spots, those of the middle of the back being generally confluent, of the face elongate, band-like; the legs dark-banded, beneath white.

Inhab. Port Essington.

Somewhat like *Discoglossus pictus* in appearance. The internal nostrils are far apart, with an elongate group of palatine teeth level with their hinder edges.

Taking advantage of the space of the plate, figures of the following species from the same country, which have not hitherto been illustrated have been added. They were described or noticed in the list before referred to.

1. *Cystignathus dorsalis*, t. 1. f. 2. Gray, *Ann. Nat. Hist.* 1841.

2. *Phryniscus Australis*, t. 2. f. 1. Dum. and Bib. *E. Gen.* viii. 725. *Bombinator Australis*, Gray, *Proc. Zool. Soc.* 1838. 57.

III. Mr. Eyre having brought home with him the drawing of a species of cray-fish found near the river Murray, which is called by the natives *Ukodko*, I have been induced to examine the different species of *Astaci* in the British Museum collection, which have been received at various times from Australia, for the purpose of attempting to identify it.

As we have three very distinct species which have not yet been described or figured in any of the works which have passed under my inspection, I shall proceed to detail their peculiar characters and give figures of their more characteristic features.

The drawing of "the *Ukodko* or smaller Murray crayfish" most nearly resembles *Astacus quinque-carinatus*, but it is three or four times larger than any of the specimens of that species which we possess, and the figure does not shew any indications of the five keels on the front of the head. In wanting the keel on the thorax it agrees with an Australian species described by Mr. Milne Edwards under the name of *Astacus Australasiensis*, said to come from New Holland, and to be about two inches long, while Mr. Eyre's figure is more than six inches, and is said not to be taken from a large specimen. It differs from Mr. Milne Edwards' figures, in having only one spine on the wrist, so that probably there are still two more species of the genus to be found in Australia.

Mr. Eyre in his notes states—"The Fresh water crayfish, of the smaller variety; native names, *ēu-kōd-kō*, or *kōōn-gō-lă*, is found in the alluvial flats of the river Murray, in South Australia, which are subject to a periodical flooding by the river; it burrows deep below the surface of the ground as the floods recede and are dried up, and remains dormant, until the next flooding recalls it to the surface; at first it is in a thin and weakly state, but soon recovers and gets plump and fat, at which time it is most excellent eating. Thousands are procured from a small space of ground with ease, and hundreds of natives are supported in abundance and luxury by them for many weeks together. It sometimes happens that the flood does not recur every year, and in this case the *eu-kod-ko* lie dormant until the next, and a year and a half would thus be passed below the sur-

face. I have often seen them dug out of my garden, or in my wheat field, by the men engaged in digging ditches for irrigation. The floods usually overflow the river flats in August or September, and recede again in February or March. For further particulars respecting the modes of catching the eu-kod-kos, vide vol. ii. pages 252 and 267."

"I have spoken of this cray-fish as the *smaller* variety as respects the Murray. It is *larger* than the one found in the ponds of the river Torrens at Adelaide; but in the river Murray one is procured of a size ranging to 4½ lbs., and which is *quite equal* in flavour to the *finest* lobster."

These latter have not yet been received in any of our collections, so that we are unable to state how it differs from those now described: they must be the giants of the genus.

1. The Van Diemen's Land Cray-fish. *Astacus Franklinii*, t. 3. f. 1. — Carapace convex on the sides, rather rugose on the sides behind, the front only slightly produced and edged with a toothed raised margin not reaching beyond the front edge of the lower orbit, and with a very short ridge at the middle of each orbit behind; the hands compressed, rather rugose, edge thick and toothed: wrist with four or five conical spines on the inner side, the front the largest: the central caudal lobe, broad, continuous, calcareous to the tip, lateral lobes, with a very slight central keel; the sides of the second abdominal rings spinose.

Inhab. Van Diemen's Land.

Mr. Milne Edwards, (Archives du Museum, ii. 35. t. 3.) has recently described a species of this genus from Madagascar, under the name of *A. Madagascariensis*, which is nearly allied to the Van Diemen's Land species, in the shortness of the frontal process, the spines on the sides of the second abdominal segment, and in the lobes of the tail; but it differs from it in the length of the claws, and other parti-

culars. Madagascar appears to be the tropical confines of the genus.

2. The Western Australia Cray-fish. *Astacus quinque-carinatus*, t. 3. f. 3.—Carapace smooth, rather convex, and with three keels above; the beak, longly produced, ending in a spine, simple on the side and produced into a keel on each side behind; the central caudal lobe rather narrow, indistinctly divided in half, and like the other lobes flexile at the end, the lateral lobes with a central keel ending a slight spine; the hands elongated, compressed, smooth, with a thickened, toothed, inner margin, which is ciliated above; wrist with two conical spines on the inner side.

Inhab. Western Australia, near Swan River.

3. The Port Essington Cray-fish. *Astacus bicarinatus*, t. 3. f. 2.—Carapace smooth, rather flattened, with a keel on each side above in front; the beak longly produced, flattened, three toothed at the top; hands rather compressed, smooth, thinner and slightly toothed on the inner edge; the wrist triangular, angularly produced in front; the central caudal lobes with two slightly diverging keels continued, and like the others thin and flexible at the end, the inner lateral lobes with two keels, each ending with a spine.

Inhab. Port Essington, Mr. Gilbert.

The *A. Australasiensis*, Milne Edwards, Crust ii. 332. t. 24. f. 1—5. agrees with this species in the form of the beak, but the keels on the thorax are not noticed either in the description or in the figure; and the caudal lobes in the figure appear most to resemble *A. Franklinii*.

As the genus *Astacus* is now becoming more numerous in species, it may be divided, with advantage, into three sections, according to the form of the caudal lobes; thus:—

A. The central caudal lobes divided by a transverse suture into two parts, both being hard and calcareous, and with a small spine at the outer angle of the suture (*Patamobius*,

*Leach*) as *A. fluviatilis* of Europe, and *A. affinis* of North America, with an elongated rostrum, and *A. Bartonii* of North America, with a short rostrum.

B. The central caudal lobe continued hard and calcareous to the end, as *Astacus Franklinii* of Van Diemen's Land, and *A. Madagascariensis* of Madagascar; both have a very short beak, and the second abdominal ring spinose.

C. The central caudal lobe continued or only slightly divided on the middle of each side; but it and all the lateral lobes are thin and flexible at the hinder parts, as *Astacus quinque-carinatus*, and *A. bicarinatus* of Australia, and *A. Chiliensis* of Chili.



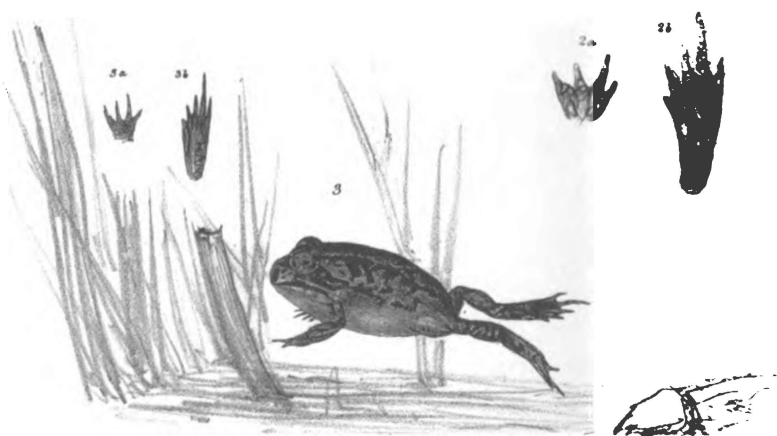
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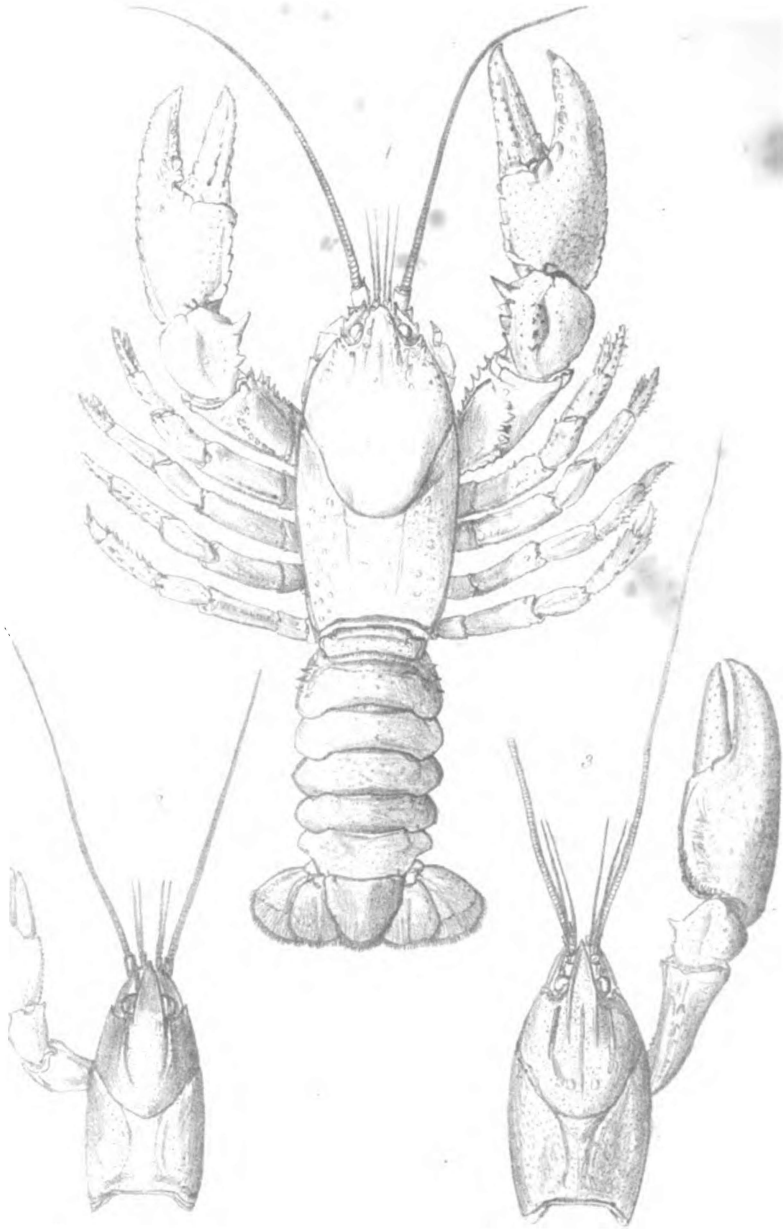
1 RHINOLOPHUS AURANTIUS  
2 CYSTIGNATHUS DORSALIS





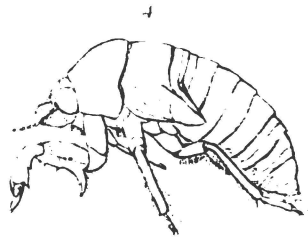
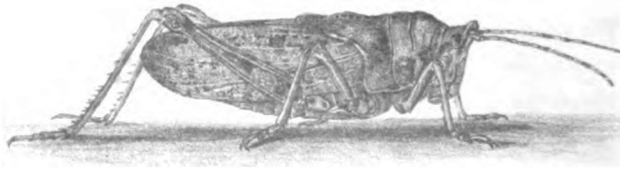
C. Hullmandel's Patent Lithogr.

1. PHRYNISCUS AUSTRALIS
2. DISCOGLOSSUS ORNATUS.
3. PERIALIA EYREI



Holmquist & Walter, *Lehrbuch*, 1880.

1. ASTACUS FRANKLINII  
 2. LATERAL VIEW OF HEAD AND FIRST FEW SEGMENTS.  
 3. DORSAL VIEW OF HEAD AND FIRST FEW SEGMENTS.  
 4. RIGHT CHELA.



Ed. Almond & Walton Lithogr. 1852

1. *TAVIDA EPHEMEREA* 2. *CHRYSOPEA MACULIPENNIS* 3.  
*ALBYDRACHES LATA* 4. *TETTOGARCIA TOMENTOSA*  
 5. *TYTULA CABE*

**JOURNALS**  
OF  
**EXPEDITIONS OF DISCOVERY**  
INTO  
**CENTRAL AUSTRALIA,**  
AND  
**OVERLAND**  
FROM ADELAIDE TO KING GEORGE'S SOUND,  
IN THE YEARS 1840-1;  
SENT BY THE COLONISTS OF SOUTH AUSTRALIA,  
With the Sanction and Support of the Government:  
INCLUDING AN ACCOUNT OF THE  
MANNERS AND CUSTOMS OF THE ABORIGINES  
AND THE  
STATE OF THEIR RELATIONS WITH EUROPEANS.

BY **EDWARD JOHN EYRE,**

RESIDENT MAGISTRATE, MURRAY RIVER.

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IN TWO VOLUMES.

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