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DESCRIPTION OF A NEW FLEA (*STEPHANOCIRCUS
DASYURI*) FROM NEW SOUTH WALES; WITH NOTES
OF SOME OTHER INSECT PARASITES KNOWN IN
AUSTRALIA.

By FREDERICK A. A. SKUSE, Assistant in Entomology.

[Plate XVII.]

The specimens from which the appended description has been derived were obtained in numbers by my colleague, Mr. Edgar R. Waite, and myself whilst searching for *Ixodes* on the body of the Australian Tiger Cat, *Dasyurus maculatus*, Kerr.

It must not be entertained that the writer is impetuous to describe isolated species, or is an advocate of the only too prevalent practice. The reason for now so doing is certainly in part excusable, owing to the distinctive character of the insect under notice, but it is more especially done with the view of soliciting *authentic* specimens of the cutaneous Insect, Arachnid and Arachnoid parasites infesting our native Vertebrates, the majority of which will doubtless prove to be plagued with their own peculiar forms.

Very few records appear to have been made of the external parasites of Australian animals, and few of these with reference to their respective hosts. With the view of collecting specimens, it might be pointed out to those in the bush districts having the opportunity, that they may be sought with success upon any animal. Even the fleas themselves have other "fleas" to bite them. Mammals, birds, reptiles, amphibians, and fishes, all have parasites infesting their skin—in most cases species peculiar to themselves; in many, several distinct forms, each of which usually occupies some particular portion of the surface of the body. These pests are by no means confined to insect representatives; indeed the majority belong to the Arachnida. Various species of flies deposit their eggs in the skins of both warm- and cold-blooded Vertebrates, some permanently residing under the hair or feathers in their perfect condition, and gorging themselves with the blood of their victims. Many varieties of fleas (*Aphaniptera*) have been recorded, most of which, under ordinary circumstances, are peculiar to some particular beast or bird. Bugs and lice, of which numerous undescribed forms doubtless exist on our native animals, may be readily collected. Of Arachnids, it is scarcely necessary to direct attention to the ticks, a species of which, *Ixodes hydrosauri*, Denny, occurs upon one of our large lizards. There are also many kinds of minute eight-legged mites, which feed upon various animals,

living upon or under the skin. Among these might be mentioned, for example, the well-known, microscopic, itch mites (*Sarcoptidae*) and the subcutaneous parasites of birds (*Hypoderidæ*), usually to be found in great numbers, or "nests," especially in the fatty masses under the base of the wings, adhering to the veins and in other portions. Species of all these forms are represented in this country, but the material at disposal is insufficient to induce the publication of descriptions at present.

Order APHANIPTERA.

Family PULICIDÆ.

STEPHANOCIRCUS, *gen. nov.*

Body elongate, especially in the female, bristly, noticeably stronger at the anal extremity. Antennæ capitate, four-jointed; the second joint in female with long bristles extending to the tip of the fourth, in male very short; fourth joint lamellar, apparently composed of nine segments. Head moderately large; *in the female with an exerted, cap-like patella in the front, strongly pectinated round its posterior margin*, the face also strongly pectinated; in the male the posterior margin of the head only pectinated; *eyes wanting in the female*; trophi less than the length of the head; mandibles extremely slender, minutely serrated, encased in four-jointed labial palpi, which they somewhat exceed in length; lingua extremely slender; maxillæ elongate, triangular, somewhat exceeding the second joint of the labial palpi, with no apparent apical joint; maxillary palpi four-jointed, the first and fourth of about equal length, the third shorter and the second the longest, acuminate; joints of the labial palpi progressively diminishing in length and thickness. Prothorax in female with a strong pectinate fringe. Legs long, spinous; coxæ of posterior two pairs with a distinct notch posteriorly at the apex; femora very minutely and sparingly spined; tarsi five-jointed, the first, second, and fifth joints long, the third shorter, the fourth shortest, half the length of the fifth; claws microscopically denticulate.

STEPHANOCIRCUS DASYURI, *sp. nov.*

Length of male 1.90 mm.; of female 2.80 mm.

Castaneous brown, nitidous. Head of the male convex above, of female flat. Eyes of male small, black. Pectinal fringes and setæ black or dark brown. Thorax long, in the female nearly the length of the body. Abdomen about twice as long as broad in the male, shorter in the female, darker castaneous brown in the female, bristly. Legs of a uniform pale castaneous brown.

Habitat.—New South Wales, on *Dasyurus maculatus*, Kerr.

The species for which the above new genus has been proposed was at first considered by me to be attributable to *Ceratopsyllus*

of Curtis, but the absence of eyes, remarkable structure of the head, and the elongate thorax in the female, seem to demand its exclusion from known genera.

Not the slightest trace of eyes could be detected in specimens of the female, after repeated examinations under a $\frac{1}{4}$ in. objective. Their rightful position is occupied by a bristly hair. In my opinion the female anchors herself by the spiny corona, and is perfectly blind.

APPENDIX.

DIPTERA (Flies).

Family *CESTRIDÆ* (Bot-flies, Breeze-flies).

Larvæ parasitic on various species of mammals, found under the skin, in the frontal sinus, or in the stomach.

Examples :

CESTRUS, Linn.

Cestrus ovis, Linn., the sheep bot. (Proc. Roy. Soc. Tasm., p. 258, 1884).

GASTROPHILUS, Brauer.

Gastrophilus equi, Fabr., the Horse bot.

Universally distributed.

Obs.—Also a species which is said to attack the natives of N. Australia (Trans. Aust. Assoc. Ad. Sc., p. 535, 1890).

Family *OSCINIDÆ*.

BATRACHOMYIA, Kr.

Larvæ living beneath the skin of frogs.

Examples :

B. nigratarsis, Sk., on *Hyla phyllochroa* (Proc. Linn. Soc. N.S.W., Vol. iv., Ser. 2., p. 175, 1889). Illawarra, New South Wales.

B. quadrilineata, Sk., on *Pseudophryne bibronii*. (*l.c.*, p. 177). Burrawang, New South Wales.

Family *HIPPOBOSCIDÆ*.

(Forest-flies, Horse-tick, Sheep-tick, and Bird-flies).

Perfect insects, living beneath the hair of mammals or the feathers of birds.

Examples :

HIPPOBOSCA, Linn.

H. australis, Guér., host unknown (Voy. de la Coq., ii., p. 302, 1830). Port Jackson, New South Wales.

H. viridipes, Walk., host unknown (Trans. Ent. Soc., N.S. iv., p. 235, 1857). New South Wales.

ORNITHOMYIA, *Latr.* (Bird-flies).

- O. australasiae*, Wied., host unknown (Auss. Zweif. ii., p. 608, 1830). Australia.
- O. batchiana*, Rond., host unknown (Ann. Mus. Cir. Gen. xii., p. 158, 1878). Grafton, New South Wales.
- O. nigricornis*, Erich., host unknown (Archiv. f. Naturg. viii., p. 274, 1842). Tasmania.
- O. stipituri*, Sch., on the Emu wren, *Stipiturus malachurus*, Lath. (Reise "Novara," Zool. ii., p. 374, 1868). Sydney, New South Wales.
- O. tasmaniensis*, Macq., host unknown (Dipt. Exot., 4th suppl., p. 309, pl. 28, fig. 15, 1850). Tasmania.

MELOPHAGUS, *Linn.* (Wingless "Sheep-tick").

- M. ovinus*, Linn., on sheep (Trans. Aust. Assoc. Ad. Sc., p. 540, 1890). Universally distributed.

OLFERSIA, *Wied.*

- O. macleayi*, Leach., host unknown (Eph. Ins., p. 12, 1817). Australia.

Family NYCTERIBIDÆ (Wingless "Bat-ticks").

Some species known, but none yet described from Australia.

APHANIPTERA (Fleas).

Family PULICIDÆ.

Perfect insects parasitic upon warm-blooded animals.

*Examples:*PULEX, *Linn.*

- P. echidnæ*, Denny, on Australian Porcupine, *Echidna aculeata*, Shaw (Ann. Mag. Nat. Hist., xii., p. 315, pl. xxxvii., fig. 6, 1843). Tasmania.
- P. irritans*, Linn., the human flea.
- P. felis*, Linn., on the domestic cat.
- P. canis*, Linn., on the domestic dog.

Obs.—This species swarms innumerable in certain seasons in sandy situations and in houses, often assuming the nature of a plague.

- P. gallinæ*, Linn., on the domestic fowl.

STEPHANOCIRCUS, *Sk.*

- S. dasyuri*, Sk., on the Tiger Cat, *Dasyurus maculatus*, Kerr. Probably generally distributed in Australia.

Type.—In Australian Museum.

ECHIDNOPHAGA, Oll.

E. ambulans, Oll., on Australian Porcupine, *Echidna aculeata*, Shaw (Proc. Linn. Soc. N.S.W., i., Ser. 2, p. 172, 1886).

Obs.—Remarkable on account of its inability to jump. Perfectly distinct from *P. echidnæ*, Denny, from the same host. New South Wales.

Type.—In Australian Museum.

HEMIPTERA HETEROPTERA (Bugs).

Family ACANTHIDÆ.

Perfect insects parasitic upon warm-blooded animals.

ACANTHIA, Fab.

Example:

Acanthia lectularia, Geoffr., the bed-bug (Catl. Hem. Hetr. Brit. Mus., part vii., p. 43, 1873). Universally distributed.

HEMIPTERA ANOPLURA (Lice).

Family PEDICULIDÆ.

Perfect insect parasitic upon the bodies of warm-blooded animals, often confined to particular portions.

Examples:

PHTHIRIUS, Leach.

P. inguinalis, Leach, on the human body.

PEDICULUS, Linn.

P. capitis, De Geer, on the human head.

P. vestimenti, Nitzsch, on the human body.

PHILOPTERUS, Nitzsch.

Parasitic upon birds.

P. (Lipeurus) variabilis, Nitzsch, on the domestic fowl.

P. (Lipeurus) baculus, Nitzsch, on the varieties of pigeons.

TRICHODECTES, Nitzsch.

Parasitic upon mammals.

T. latus, Nitzsch, on the domestic dog.

T. subrostratus, Nitzsch, on the domestic cat.

T. scalaris, Nitzsch, on the ox.

T. equi, Nitzsch, on the horse.

T. sphaerocephalus, Nitzsch, on the sheep.

The above list is very incomplete, the object in publishing it being to direct the attention of our "bush" observers to the

diversity of additional forms which might be expected by research.

Our knowledge of the native Arachnid and Arachnoid parasites is too meagre, as far as the exact determination of species is concerned, to yet attempt even a preliminary list.

ON A SPECIMEN OF *CREX CREX*, SHOT AT RANDWICK,
NEW SOUTH WALES.

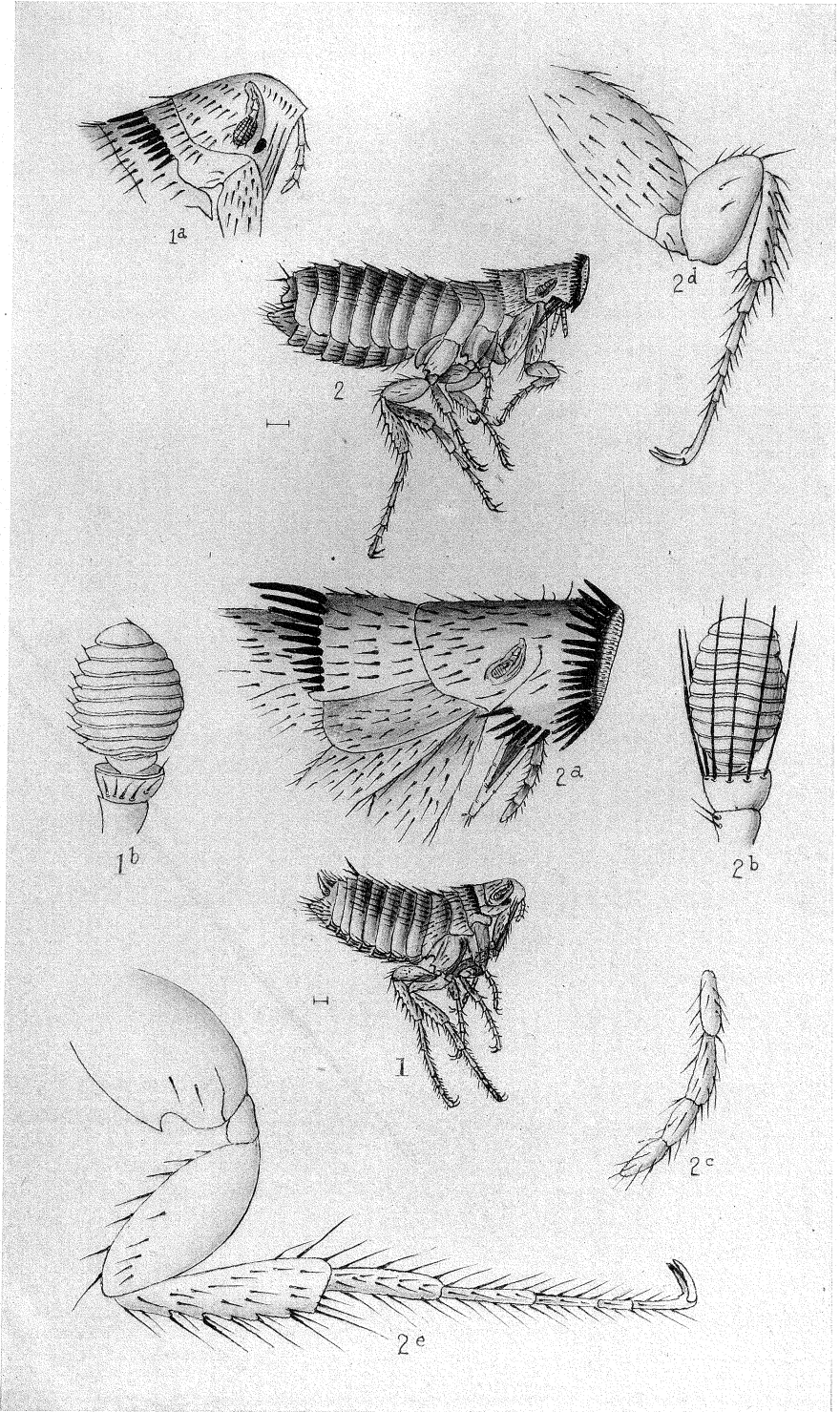
BY ALFRED J. NORTH, F.L.S., Assistant in Ornithology.

Recently Mr. H. Newcombe, Deputy Registrar-General of Titles, presented a freshly shot specimen of *Crex crex* to the Trustees of the Australian Museum. The bird was obtained the previous day, June 14th, 1893, by Mr. Walter Higgs, who was shooting in a scrubby portion of the Rifle Range at Randwick, a well known haunt of the *Rallida*. It was an adult female, and upon dissection the ovaries were found to be fairly developed. This species ranges throughout Western Asia, Europe, and the United Kingdom, it also occurs in Northern and North-eastern Africa, and the late Mr. Gurney records it as common during the summer months as far South as Natal, a straggler also being recorded by Mr. Ayres from Cape Colony. It occurs in Asia Minor, Arabia, and Turkestan, and it is stated by Mr. Seebohm to be common as far North and East as the Altai Mountains; also Dr. Sharpe recently records it in a collection of birds from Fao in the Persian Gulf, but it is not included either by Hume or Murray in the Indian avifauna. Stragglers are recorded by Professor Baird to the Eastern coast of the United States, and Dresser, in his Birds of Europe, states a specimen was said to have been once obtained near Nelson, in New Zealand, but on what authority I know not. Sir Walter Buller does not include it in his Birds of New Zealand. Previously this species has not been recorded from Australia, and although possessed of great powers of flight, it is hard to imagine that the specimen obtained at Randwick, should it have succeeded in reaching Northern Australia by the way of India, Sumatra, and Java, would still have wandered so much farther out of its normal range by crossing the continent to South-eastern Australia. The occurrence of this bird within a few miles of Sydney, where a number of foreign birds are frequently brought

EXPLANATION OF PLATE XVII.

- Fig. 1. *Stephanocircus dasyuri*, Sk., (male); 1*a*, head of same; 1*b*, antenna.
,, 2. *Stephanocircus dasyuri*, Sk., (female); 2*a*, head of same; 2*b*,
antenna; 2*c*, maxillary palpus; 2*d*, fore-leg; 2*e*, hind-leg.

[The figures, which are all greatly magnified views, have been reproduced from drawings by Mr. G. H. Barrow, by the photoline process.]



G. H. BARROW, del.

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