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Description of the Unique
Parotia lawesii* × *Paradisaea rudolphi
Hybrid Bird of Paradise
(Aves: Passeriformes: Paradisaeidae)

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ABSTRACT. A unique female-plumaged Australian Museum specimen (AM O. 40100) of a hybrid between Lawes' Parotia *Parotia lawesii* and the Blue Bird of Paradise *Paradisaea rudolphi* is described, illustrated and compared with female-plumaged specimens of the putative parents. The hybrid, from the Baiyer Valley, Papua New Guinea, exhibits an external morphology intermediate between the two parent species. The informal common name—Schodde's Bird of Paradise—is applied to this new bird of paradise hybrid combination.

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During his work on the systematics of birds of paradise (Paradisaeidae), Dr Richard Schodde discovered a skin in the Australian Museum, Sydney, that appeared to be the product of a previously unknown intergeneric hybrid mating between Lawes' Parotia *Parotia lawesii* and the Blue Bird of Paradise *Paradisaea rudolphi* (Christidis & Schodde, 1993). Schodde suggested we examine the specimen. We did so, and found ourselves in complete agreement with his interpretation of its appearance.

While 13 intergeneric and seven intrageneric hybrid birds of paradise have been reported to have occurred in the wild, based on relatively few specimens (Stresemann, 1930; Mayr, 1941, 1962; Gilliard, 1969; Fuller, 1979), the bird Schodde brought to light is the first hybrid known involving the combination of *Paradisaea* and *Parotia*. The specimen has been

described only as being in feminine plumage with “the ventral markings and dusky bill of *Parotia lawesii* and the all black head, white orbital marks and heavy decurving bill of *Paradisaea rudolphi*” (Christidis & Schodde, 1993). For detailed descriptions and illustrations of the plumages of these parental species, see Gilliard (1969), Cooper & Forshaw (1977), Beehler *et al.* (1986) and Coates (1990).

The purpose of this note is to provide a full description and an illustration of this unique and significant specimen in the zoological literature. This is highly desirable because of the considerable historical and contemporary interest in the group generally (Gilliard, 1969; Schodde, 1976; Diamond, 1981, 1986; Beehler, 1989; Christidis & Schodde, 1992) and hybrids within it in particular (Stresemann, 1930; Iredale, 1950; Mayr,

1962; Fuller, 1979; Christidis & Schodde, 1993). The loss to science from a major national museum of an intergeneric wild hybrid specimen (*Epimachus fastuosus* × *Astrapia nigra*, previously referred to as *Epimachus ellioti*), one of only two, emphasises the vulnerability of such uniquely valuable specimens (Fuller, 1979).

The following description is of Australian Museum female specimen O. 40100. It was collected by the New Zealand anthropologist Professor Ralph Bulmer on 15 February 1956 at Trepikama, Baiyer Valley, New Guinea at c. 1616 m asl. In view of this location, the specimen must represent a *Parotia lawesii lawesii* × *Paradisaea rudolphi margaritae* hybrid (Gilliard, 1969; Diamond, 1972; Schodde & McKean, 1973; Cracraft, 1992). The subspecies *P. l. exhibitata*, described from the Mount Hagen area by Iredale (1948) is now considered invalid and a synonym of the nominate subspecies [hence *Parotia l. (exhibitata) lawesii* of Table 1]. Directly comparable material of these two putative parent taxa is limited in Australian collections to a single female *Parotia l. lawesii* from Haiyeria, New Guinea, collected by Captain Ned B. Blood on 1 October 1946 (AM O. 38564) and a female-plumaged, but immature and dark-billed male *Paradisaea r. margaritae* from Upeta, Baiyer River Valley, New Guinea, collected by Ralph Bulmer on 25 October 1955 at c. 1830 m asl (AM O. 40078). In addition, another five adult female specimens of *Paradisaea r. margaritae* and four female *Parotia l. lawesii* exist in overseas collections (see Table 1). As the hybrid is morphologically intermediate between the typical female plumages of the putative parents, the limited material available is adequate and additional material would add little for the present purposes. To save space below, we use only *Parotia* and *Paradisaea* to indicate the two putative parent species, unless otherwise indicated. We refer, in parentheses, to numbers allocated to colours in Smithe (1975) to indicate only the colour closest to that being described.

This hybrid bird has the general appearance of a female-plumaged *Parotia lawesii* (Plate 1) and would in all probability be identified as a Lawes' Parotia if seen alive in the wild, unless exceptionally prolonged good views of it be obtained by an expert observer. It is therefore convenient and appropriate to describe it with respect to how it differs from the female-plumaged *Parotia* parent.

The most obvious influences of *Paradisaea* genes are expressed by (a) the semicircle of fine silver-white feathers above and below the eyes, narrower in the hybrid than in *Paradisaea* and with many of the feathers, particularly toward the front of the upper semicircle, finely tipped with rufous; (b) the bill, which is clearly that of *Paradisaea* in size and shape but which has the narrow slit nostril of *Parotia*, as opposed to the broader and rounder one of *Paradisaea* (Fig. 1); (c) the lack of any sign of a supra-nasal tuft of feathers (of Schodde & McKean, 1973); and (d) the almost total masking of pale, black-tipped, feathers that form an obvious broad malar stripe and conspicuously pale throat in normal female *Parotia* (see Plate 1).

The hybrid, while lacking the malar stripe, does not have the "all black head" of *Paradisaea*, as was indicated (Christidis & Schodde, 1993), but is dark rich chestnut-headed (223) and is blackish only on the lores and forecrown, as in *Parotia*. The chin, throat and upper chest are rich chestnut (223A) barred with black, and therefore much darker than in the pale-throated (223D) *Parotia*. Christidis & Schodde (1993) noted that the hybrid had the "dusky bill of *Parotia lawesii*" but as the bill colour of this specimen is the same as that of the immature male *Paradisaea* (AM O. 40078) used here for comparison (Plate 1), and that of a fledgling examined by D. Haddon (*in litt.* to CBF) was also dark, this may merely indicate immaturity and not the influence of *Parotia*.

The throat and upper breast of the hybrid are a much darker, richer chestnut than that of *Parotia*, and this darker area extends downward to where the blackish-brown throat and chest colour extends in *Paradisaea*, thus expressing the influence of the latter parent (see Plate 1). The nape, back and rump of the hybrid (223A) are similar to, but slightly less rich and red than, those of female *Parotia*.

The mid and rear crown feathers of the hybrid are consistently short, compact and rounded throughout, unlike those of *Parotia* spp., in which these feathers become longer and broader from mid-crown to the rear and include conspicuously elongated narrow feathers behind each eye that form obvious "ear tufts" (Fig. 1).

The upper wing and tail of the hybrid are unlike the rich dark chestnut brown (223) of *Parotia* in being clearly less chestnut, paler (121) and with a slight bronze sheen, which in certain lights has a pale silvery-blue hue, expressing the genetic influence of *Paradisaea*. The under surface of the tail of the hybrid is likewise, but more so, paler (28) and less rufous than in *Parotia* (21) with a pale silver-greyish sheen. The central shafts of the underside of the tail feathers are not dark as in *Parotia* but are pale, almost whitish, as in *Paradisaea*. The bases of the central tail feathers, particularly the central pair, are whitish, unlike *Parotia* but as in *Paradisaea*. The hybrid's underwing is slightly paler, less brown, than that of *Parotia*, but less markedly so than the tail. The trailing edges of the basal half of the undersurface of the hybrid's primaries are broadly and conspicuously buff-brown (223C). These are also paler (whitish) in *Paradisaea*, whereas the primaries of *Parotia* are uniform in colour throughout. The tail feathers of the hybrid are intermediate between the broader ones of *Parotia* and the narrower, more pointed ones of *Paradisaea*; however, differences in age may complicate this character, which limited material does not permit us to examine.

The external characters of the hybrid bird are shown together with those of a female-plumaged *Parotia l. lawesii* and *Paradisaea r. margaritae* from the same area in Plate 1.

The short tenth, or outer, primary of *Parotia lawesii* is highly modified, far more so in adult males than in females. Figure 1 shows that the shape of this primary in the hybrid is somewhat intermediate in degree of

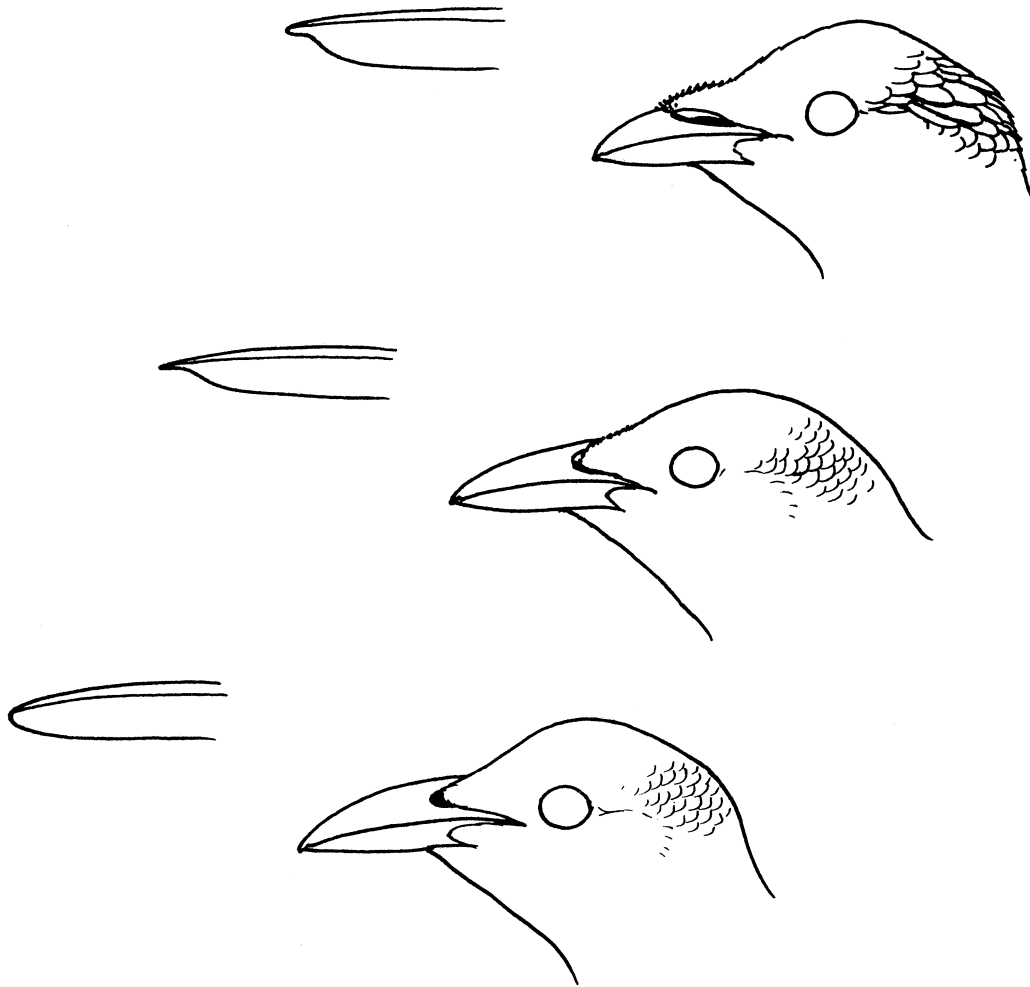


Fig. 1. Heads and distal end of the tenth, or outer, primary of *Parotia lawesii* (top), *Paradisaea rudolphi* (bottom) and the hybrid between these two (centre) showing differences in feather tip, bill and nostril shape and head feathering.

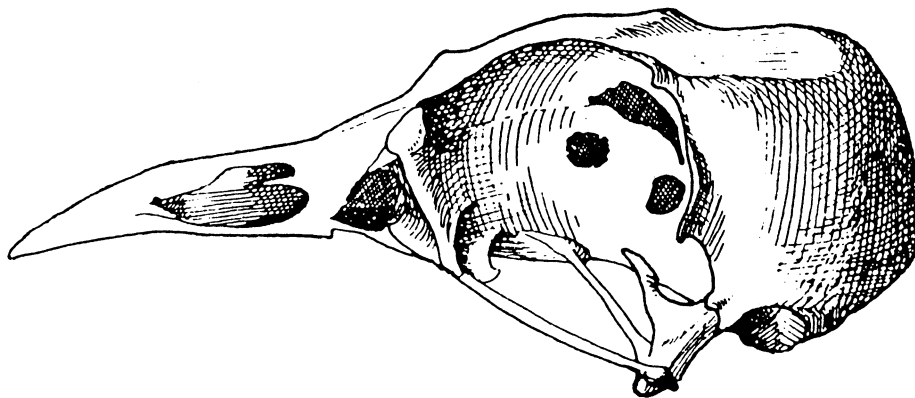


Fig. 2. Skull of Lawes' Parotia *Parotia lawesii* showing the concavity of the crown dome, to accommodate large muscles that manipulate plumes arising from behind the ears of adult males. From Stonor (1938).



Plate 1. The appearance of the unique Australian Museum specimen AM O. 40100 female-plumaged *Parotia lawesii* × *Paradisaea rudolphi* hybrid, or Schodde's Bird of Paradise, (centre) and that of the putative parent taxa AM O. 38564 female *Parotia lawesii* (*exhibita*) *lawesii* (top) and AM O. 40078 immature male *Paradisaea rudolphi margaritae* (bottom). Painting by William T. Cooper.

modification between that of female *Parotia* and the female-plumaged *Paradisaea*, but it should be noted the ages of these birds are unknown. Since the female *Parotia* is in active wing moult, we cannot, however, comment on the relative length of this feather (much longer in *Paradisaea* than in *Parotia*).

A novel but not readily apparent character of both sexes of *Parotia* spp., is that the crown or dome of the skull is conspicuously concave, or “dished” (Fig. 2), a remarkable adaptation to accommodate large muscles required for the manipulation of the plumes of displaying adult males (Frith & Frith, 1981). Notwithstanding the general *Parotia*-like appearance of the hybrid, however, it has only the slightest concavity of the skull, its crown profile being more like that of *Paradisaea*, in harmony with its *Paradisaea*-like bill.

Table 1 presents measurements of the hybrid bird and those of *Parotia* and *Paradisaea* in Australian collections. The hybrid's wing length is similar to that of *Parotia*, its tail length is shorter than that of adult *Parotia* and immature *Paradisaea* but longer than adults, its bill width is near intermediate, while its tarsus and bill lengths are far closer to those of *Paradisaea*.

Lawes' *Parotia Parotia lawesii* × Blue Bird of Paradise *Paradisaea rudolphi* hybrid—Schodde's Bird of Paradise

While scientific and vernacular names for wild hybrid birds are not entirely desirable or justified and have no formal standing in zoological nomenclature, most hybrid birds of paradise have been given one or both (Iredale, 1950; Fuller, 1979). No scientific name should be established for the above hybrid. We do not suggest a formal common name but would, in keeping with tradition, like to see this hybrid at least informally known as Schodde's Bird of Paradise to appropriately acknowledge Dr Richard Schodde's discovery, as part of his far more significant systematic work on the Paradisaeidae, expressed in both his numerous publications and the fine and valuable collection of Paradisaeidae in the Australian National Wildlife Collection at the CSIRO in Canberra.

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Table 1. Measurements¹ of adult female specimens² of *Paradisaea rudolphi margaritae*, *Parotia lawesii (exhibita) lawesii* and an immature female hybrid between these taxa from Papua New Guinea.

Taxon Collection #	Wing length	Tail length	Tarsus length	Bill length	Bill width
<i>Paradisaea rudolphi margaritae</i>					
AMNH 348209	148	90	37.9	40.5	9.0
AMNH 705629	146	94	36.6	39.0	8.6
ZMH P15 66.35	146	88	36.6	38.4	9.2
ZMH P15 66.36	145	91	39.5	40.8	8.5
PMNH 7576	147	86	38.8	40.5	9.1
MEAN	146	90	37.9	39.8	8.9
<i>Paradisaea r. margaritae Parotia l. (exhibita) lawesii</i>					
HYBRID AM O. 40100	146	93	39.6	37.3	7.2
<i>Parotia lawesii (exhibita) lawesii</i>					
NHM 1939.12.9.1533	143	93	46.0	31.7	5.8
NHM 1939.12.9.1571	147	99	46.6	32.8	5.8
BBM 60084	143	97	45.4	33.2	5.5
AM O. 38564	147	95	45.9	29.0	6.5
PNGM 25866	144	94	46.4	31.6	5.4
MEAN	145	96	46.1	31.7	5.8

¹ Wing length is the straightened, flattened, maximum length; tail length from point of entry of central pair into skin to tip of longest feather; tarsus from depression in the angle of intertarsal joint to distal end of tarsometatarsus; bill length from tip to union with anterior margin of skull and bill width at anterior nostril. Measurements in millimetres.

² AMNH —American Museum of Natural History, New York; ZMH —Zoologische Museum, Hamburg; PMNH —Peabody Museum, New Haven; AM —Australian Museum, Sydney; NHM —The Natural History Museum, Tring; BBM —Bernice Bishop Museum, Honolulu; PNGM —Papua New Guinea Museum, Port Moresby.