hand. K.G. described them to me as being cold to touch, with their eyes shut, their wings closely folded, their legs and feet tucked in and their plumage dull and lifeless. I examined them at 13:35. By then they were beginning to move about, their eyes were open and their wings and tail spread. They had begun to use their legs, but still were unable to fly and could be picked up in the hand, showing no fear when lifted. I watched them, while the load of sand was tipped out. During the next fifteen minutes, with much quivering and fluttering of their wings, they slowly recovered their power of flight. At 13:50 we took them back to the quarry; during the drive, it became necessary to cover the tin to prevent them flying out. We released them at the quarry at 14:00. They flew straight up and circled about as though nothing had happened. During the period of recovery a remarkable transformation took place in their plumage, which changed from the dull and lifeless appearance, noted when first found, to feathers vibrant with life, the colour and texture taking on depth and translucence.

The period from 13:00 to 14:00 was possibly the warmest part of the day. During the previous eighteen days it had been cold and wet, with some rain falling on every day except three, 117 mm being recorded over the period. This wet spell was preceded by five weeks of fine cold weather, leading back to the squally weather that marked much of March and the beginning of April.

The White-backed Swallow was recorded at Yanchep lake in December 1902 (Milligan 1903, Emu 3: 20–22). I observed it on the outskirts of the park in February and July 1970 and during the last year others reported it in the park on a number of occasions. In the survey of avifauna of Yanchep National Park, presently being carried out, it has been noted as an occasional visitor, but possibly it is a breeding species, and some birds may be resident, spending the winter in a state of torpidity.

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25 June 1971.

CORRESPONDENCE

ABNORMAL BREAST-COLOUR OF CHESTNUT-SHOULDERED WRENS

Sir, — Harrison (1971, Emu 71: 37–38) plausibly suggests that violet-tipped feathers on the otherwise black breasts of Purple-backed Wrens *Malurus lamberti assimilis* are probably caused by a reduction in production of pigment during the start of moult. With the absence of excess black pigment, the hidden violet colour is revealed.

Unfortunately in referring to two of my publications on this topic (Ford 1966, Emu 66: 47–57; 1969, Emu 68: 283–284), some errors have occurred. First, Harrison states that I (1966) referred to two specimens having some violet-tipped feathers on their black breasts. In this paper I mentioned only one specimen, but in the second article (1969) I referred to a second specimen.

Second, Harrison states that I (1966) considered the occurrence of this phenomenon as evidence of *probable* hybridization between *M. lamberti* and the Blue-breasted Wren *M. pulcherrimus*. However, after considering the *possibility* of hybridization, I stated that the specimen was *more likely* (= probably) slightly aberrant. In the section of this paper dealing with the abnormally plumaged bird, I presented substantial evidence to show that *M. lamberti* and *M. pulcherrimus* do not interbreed in their zone of sympatry in Western Australia.

Third, he states that I (1969) suggested that the violet colour resulted from fraying, causing structural changes enough to produce a Tyndall effect. However, he omits to acknowledge that I prefaced this remark with the fact that the cause was also moult.

Thus, Harrison has simply modified my suggestion on what causes the Tyndall coloration of some of the normally black breast feathers; violet on the breasts of Purple-backed Wrens is caused by a change in the amount of black pigment in the breast feathers rather than by changes in structure. I (1969) suggested that fraying was a contributory factor because some of the violet feathers appeared to have no or little interlocking of their barbules.

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22 July 1971.

ALTITUDINAL DISTRIBUTION OF BOWERBIRDS OF THE GENUS *AMBLYORNIS*

Sir, — LeCroy (Emu 71: 143) draws attention to the doubtful validity of old data on altitudinal distribution in New Guinea, quoted by Frith (Emu 70: 196–197). The fact that specimens of *Amblyornis subalaris* and *macgregoriae* are labelled from the same locality is meaningless in terrain where one kilometre may involve an altitudinal difference of hundreds of metres and, in consequence, very different habitats.

'Aroa River' is a locality that needs explanation. It is an insignificant feature that has figured too prominently for too long in the literature because the geography of the area has been vaguely known. In the area in question, the coast, the flat Mekeo plain, a low but very rugged range of foothills, the valley of the Vanapa (Vetapu) River and finally the main central cordillera, 4,000 m high, run roughly parallel to one another and trend north-west. The Aroa River is one of several small rivers that flow to the sea down the western slopes of the foothills. Recently (June 1971) during a detailed aerial reconnaissance of the area in unusually clear weather, I was able to identify the headwaters of the Aroa River rising in a group of peaks, about 2,100 m high, 20 km south of Mt Tafa. Like Mt Tafa, these peaks are covered almost permanently in cloud, probably more so than is the main range, and I could clearly see, as on Mt Tafa, extensive moss-forest at an unusually low altitude. As the Archbold Expedition of 1933–34 found at Mt Tafa, a high-montane avifauna similar to that of the main range almost certainly inhabits the area of the headwaters of the Aroa River.

Meek doubtless collected his specimens of *macgregoriae* in this moss-forest, as did the Archbold Expedition theirs in similar moss-forest on Mt Tafa. *A. subalaris* would have been found on the mid-mountain slopes, which, though close horizontally, could have been hundreds of metres lower than the moss-forest, such are the gradients in the area. The New Guinea Bird Society has recorded both species at Efogi (*c.* 1,800 m altitude) 50 km to the south-east in the Owen Stanley Mts, but found *macgregoriae* in moss-forest and *subalaris* lower down (L. W. C. Filewood pers. comm.). The species apparently need quite different habitats and their ranges apparently overlap merely because the moss-forest occurs at different altitudes in different areas with different climates.

There is also hearsay, but reliable, evidence that *macgregoriae* extends much further east than the Aroa River, to almost as far as the extension of range for *subalaris* reported by Frith (Mt Simpson on his map). While asking the Efogi people about the two species, my Sergeant-major, Baumara-Dinu, spontaneously asked if 'the birds were two with yellow crests, one in moss-forest that danced round a post and the other lower down that played in a house'. Baumara, a most reliable and accurate observer, explained that he knew both birds in the area of Mt Suckling between Abau and Tufi, which his tribe crossed annually when trading. The Mt Suckling area is 250 km from the Aroa River.

Frith's interesting paper and Mrs LeCroy's letter draw attention to the need for care when interpreting altitudinal distribution in New Guinea. One has to remember that changes in the habitat are caused more by varying amounts of cloud-cover than by mere altitude.

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11 August 1971.