

trace of the rufous under-colouring; while another immature bird (male), about eight weeks old, has almost adult plumage except that the outer webs or edgings to the wings are dark chestnut-brown and not cross-barred, as in the full adult. As Mr. Jackson, in this issue, has furnished the dimensions, details, flesh parts, &c., there is no need to recapitulate same here.

Regarding the Olive Thickhead (*Pachycephala olivacea macphersonianus*), mentioned in the same *Emu*, p. 273, and described from a single specimen, a mated pair obtained by Mr. Jackson confirms this northern sub-species, and that the type skin was a male.

Male.—Lighter-coloured generally, and more greyish (slate-grey) about the head than southern form; a distinct mottled white throat is succeeded by a greyish band on the breast, which breaks into a tawny olive or buckhorn-brown under surface. Eyes reddish-brown; feet silvery-grey; legs brownish; bill blackish-horn. Dimensions in mm.:—Length 209, wing 100, tail 95, tarsus 26, culmen 22.

Female.—Differs from male in the absence of the greyish head and breast band, but has the mottled white throat. Eyes coffee brown; legs and feet silver-grey; bill—upper mandible blackish-horn, lower mandible much lighter coloured. Dimensions:—Length 213, wing 102, tail 98, tarsus 30, culmen 22.

Second Trip to Macpherson Range, South-East Queensland.

BY SIDNEY WILLIAM JACKSON, R.A.O.U., BELLTREES, SCONE, N.S.W.

SEPTEMBER 20th, 1920, found me engaged putting up camp again in the luxuriant and wonderful jungles on top of the Macpherson Range, in south-east Queensland, where success had favoured me when collecting the first known female specimen of the Rufous Scrub-Bird (*Atrichornis rufescens*) in 1919, as recorded in *The Emu* (vol. xix., part 4).

The camp was situated at an altitude of nearly 3,500 feet above sea-level—several hundred feet higher than the previous camp. At this elevation, and within less than 30 miles of the ocean, the camp was frequently enveloped in clouds and mist, especially after a warm day. Often it would rain all day about the camp, yet not much over 1,500 feet below often not a drop fell. The days were mostly warm, but pleasant, and the nights rather cold, except early in December, when they were sometimes warm and sultry. Many severe cyclonic storms, accompanied by heavy rain and hail, occurred during October and November, doing much damage in the great tall scrub or jungle, as well as smashing and destroying rare nests and eggs of birds which were under observation. However, perfect specimens were found later.

During 24th October five storms passed over the camp, and extensive damage was done here and as far north as Brisbane. The continual heavy rains and gales came chiefly from the south-east, and during our time on the range (from 20th September to 12th December) nearly 30 inches of rain were registered at our camp, named "The Ark," and situated in a small clearing in the jungle. Cooking food was at times difficult—indeed, impossible. A local resident stated that it was the wettest season for years. Fortunately, two good assistants—Messrs. E. H. Page and Bernard A. O'Reilly—did well in the wet and gales, and helped me through my difficulties. During my former visit, in 1919, the season was very dry.

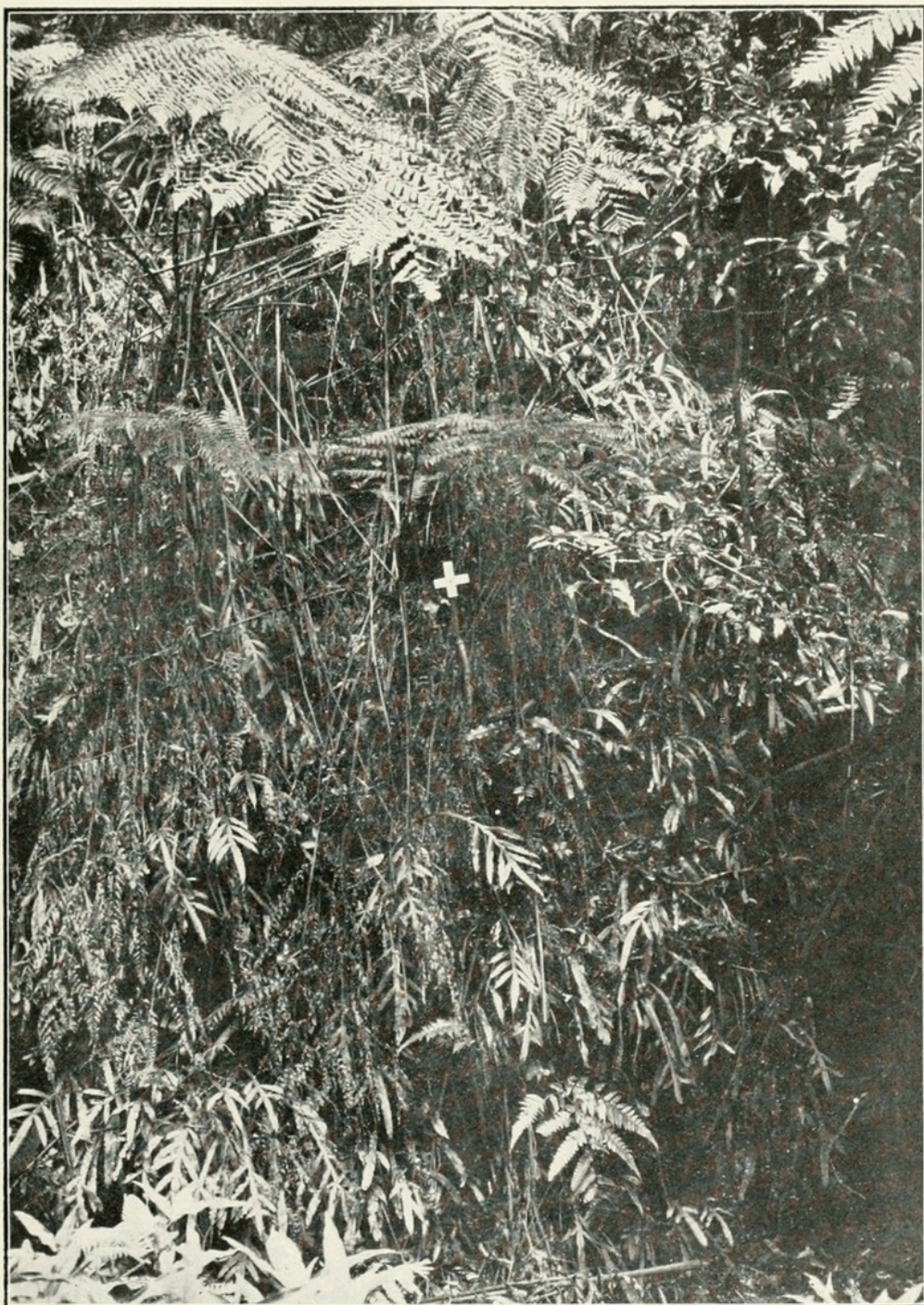
On arriving in the scrub we were struck with the numbers of birds of many species that were calling and flying about. It was a superb and unforgettable picture to see these birds of various plumage on the moss-clad vines and trees. The curious fire-flies (*Malacodermidæ*) were often noticed at night, but were more plentiful at the lower parts of the range.

RUFIOUS SCRUB-BIRD.

The first morning, daylight saw us busy, and by 6 a.m. we had located and seen our first male Rufous Scrub-Bird; he was calling in an extensive heap of vines and scrub *débris*. After careful watching a fine view of the bird was obtained as he sat on a stick and took an inquisitive peep at me; then he vanished suddenly, mouse-like, under the *débris*. As usual, his movements were wonderfully active, and his tail was kept well "cocked," especially when he moved quickly and fussed about. It is not easy to get these birds in a suitable light to examine their tails, as they live in dark places, and their colouring harmonizes closely with the surroundings. We, later, sat on a moss-covered log within 30 feet of the bird calling loudly under an immense heap of fallen trees and vines, overgrown with a thick mass of two species of scrub-weeds (*Pollia crispata* and *Elatostemma reticulatum*) which grow in or near water. For half an hour we listened to the bird calling loudly as he moved about under the *débris*, but we could not see him. At times the shrill notes vibrated loudly in our ears. As the bird called we moved on, its shrill note smothering, to a great extent, the sound made by us. Our patience was rewarded by getting a splendid view of the bird. We stood up suddenly, and the bird ran along, mouse-like, in a partly open space. He had his breast feathers puffed out, tail "cocked," and head rather thrown back in a peculiar and unusual manner. He vanished in the *débris* and passed along in front of us, keeping under the rubbish. Each glimpse we got of him showed his tail well "cocked" when he was not creeping, cramped low down, under objects. When he saw us he uttered a loud scolding note and ran down into a gully where tall stinging nettles were growing upon a heap of decayed *débris*, and where we had previously seen black snakes. Here he called and carried on his wonderful



Nest of Spine-tailed Log-Runner (*Orthonyx spinicauda*).



Site on Bank of Creek of Deserted Nest of *Atrichornis*

PHOTO. BY S. W. JACKSON, R.A.O.U.

mimicry of other birds. It is wonderful how these birds localize themselves. The other male Scrub-Birds located by us last year were all found calling at exactly the same old places during this visit.

On 28th September we got within 20 feet of an *Atrichornis* calling loudly and carrying on his clever mimicry of the notes of the Goshawk (*Astur novæ-hollandiæ*), Lewin's Honey-eater (*Ptilotis lewinii*), Yellow-rumped Robin (*Eopsaltria chrysorrhoa*), and the peculiar fussy squawk or scolding note of the Coachwhip-Bird (*Psophodes crepitans*), as well as the loud notes of the Spine-tailed Log-runner (*Orthonyx spinicauda*).

Within 70 feet of where an Albert Lyre-Bird (*Menura alberti*) was giving a concert of mimicry we located an *Atrichornis* mimicking various scrub-birds, including the Coachwhip-Bird's "scolding" note. We later heard one make several efforts to reproduce the loud "whip-crack" note. The *Atrichornis* was the only bird heard calling during the heavy gales, and it was surprising how wonderfully loud and shrill the notes were for such a small bird. When about 15 feet or so from an *Atrichornis* calling loudly the great vibration fairly rang in our ears—"Ziz-ziz-ziz."

One day we observed one up off the ground 2 feet, sitting on a vine in dense undergrowth, and calling loudly; this did not often occur. At times the bird renders a note resembling that made by a rat when caught in a trap or by a dog. The loud and continual "Chit" or ordinary note of the male sounds like tapping a thin sheet of metal on a solid block of iron rapidly with a small hammer. This effect we noticed particularly with the bird opposite our camp, where he rendered his loud "Chit" in a most indefatigable manner, usually uttering it 9 or 12 times in rapid succession.

Early in October we had an interesting experience when surrounding a male *Atrichornis* in an isolated heap on a sloping creek-bank. He made several attempts to escape, but by keen watching we kept him in for some time. The more agitated the bird became the more the tail was cocked and the small wings drooped. John Gould figured this bird correctly in his great work on "The Birds of Australia," and this is the only correct figure I have seen. The bird now repeatedly called, and we worked closer to the heap, while he peeped at us from various points of vantage. He moved each time like magic, and on seeing we were surrounding his retreat he ran across a fairly open space, and then actually *flew* or fluttered at least 10 feet in a most awkward manner, keeping about one foot above the ground. This is the first time, to my knowledge, that this small-winged bird has been seen flying. Apparently it will do so for short distances only, when hard pressed. Hunting this bird previously by myself, its chances of escaping were greater, and there was no necessity for it to fly. We met the birds up to 3,900 feet elevation. They became silent again in November, as in 1919. By

that month the young birds are out of the nests and getting the parents' attention; hence the silence. The adult male keeps silent when he is with or near the female and young.

The food consists of beetles, including various species of the weevil family (*Curculionidæ*), also smaller insects and grubs collected from damp and rotten wood and rubbish. I also found in the bird portions of fairly large longicorn beetles and pieces of the bright green elytra or wing cover of a species known as *Rhiphidocerus australasiæ*, which belongs to the family *Prionidæ*. One of their chief foods is the numerous small crustaceans (*Talitrus australis*) that hop about like enormous fleas when anything is moved from the ground in these damp jungles. They form food for many ground-birds in such places. Scrub-snails' eggs and small, tender-shelled snails such as *Vitrina*, have also come under my notice as being on their "menu." The palate is yellowish, and closely covered with minute spines of the same colour, all pointing towards the throat.

NEST OF RUFOUS SCRUB-BIRD.

It was not until the 27th October that, after much hunting, we succeeded in finding a nest containing an egg. Over the moss-covered rocks in a small stream known as Tom's Creek, and with a steep, fern-clad bank on the east side, a small brown bird moved rapidly, dodging in and out much after the manner of a Rock-Warbler (*Origma rubricata*), and uttered a little ticking note, "Tit-tit-tit-tit," with from one to six seconds or more between each "Tit." The note exactly resembled that of the female Scrub-Bird, as described in *The Emu* for April, 1920. The bird ran over a large rock and down into a cave through which the cool water of the creek was running rather rapidly. Then she got on top of the east bank, and after much exertion we chased her back into the creek among the rocks again. She came towards me, over the large rocks and vegetation, all the time uttering her feeble "ticking" note every few seconds. She was now much agitated. She was seldom seen as she moved about, and was often hidden from us, her presence being known only by her note. This rocky locality seemed more suitable for Rock-Warblers than for a Rufous Scrub-Bird. Then suddenly she made one rather long and peculiar plaintive call, hard to describe, and full of fear and distress. She then became silent, and we had great difficulty in locating her. At last we saw her, and she ran into a fairly large root-hole on the steep western bank of the creek. We rushed to the place, and, covering the hole with hats and coats, made her a prisoner. After carefully cutting down all growth surrounding the spot, we set to work to dig out the hole, and at last the bird was found at the end of the hole, over 3 feet in from the entrance. It was a female *Atrichornis*, and, although alive, was panting heavily; it died in my hand a few moments later. This rare specimen (the second female skin extant) has



Bank of Creek, showing Nest of *Atrichornis*.

been presented to the Queensland Museum, Brisbane, by Mr. H. L. White.

A close examination was then made, and at the place where we first heard the bird call we found the nest, built on the almost perpendicular bank, and placed on projecting roots amongst ferns. The rocks in the creek at this spot were covered with masses of beautiful orchids (*Sarcochilus falcata*) in full flower. The blossom is a frosted white, and about one inch across, the bottom portions of the petals being mottled with pink. The nest was situated up 2 feet 6 inches from the level of the creek bed—4 feet from where the water was running. It contained one addled egg in perfect condition, and one chick, only a few days hatched. The chick was preserved in formalin solution, as it was something new to science; it had only a little blackish down on the head and down the middle of the back, the other portions being naked and whitish in colour.

The domed nest is a typical and perfect specimen, composed of dead leaves, small pieces of dead tree-fern leaves, and flat rush or scrub-grass (*Xerotes longifolia*, var. *montana*), all loosely put together. The inside is lined neatly with the same peculiar wood-pulp material, resembling thick cardboard of coarse quality, as were all the other nests previously found. Notwithstanding all the rain, the nest was warm and dry inside. We had to strike a match and use a reflector in order to see into the dark nest, the neat round opening of which faced due west, and measured about an inch and a quarter across. The egg closely resembles those found in the Dorrigo scrubs, N.S.W., in 1898 and 1910, except that it is a little more elongated and the markings are more liberally distributed. Nest, egg, and the little chick are now in the collection at Belltrees.

The female belonging to the nest gave, in the flesh, the following descriptions and measurements (in millimetres):—Total length, 162; wing, 56; tarsus, 18; bill to base of gape, 18; tail, 60. Upper mandible dark horn colour; lower mandible light horn, very pale underneath; eyes coffee-brown; legs brownish-horn; feet light brownish-horn; circumference of body around wings folded in natural position, 95 mm.

The body, showing ovaries intact, was preserved in formalin. This female had wonderfully strong thighs and legs. No wonder the birds could get over the ground with such magic and active movements! All the under surface was a rusty colour, similar to the female secured in 1919.

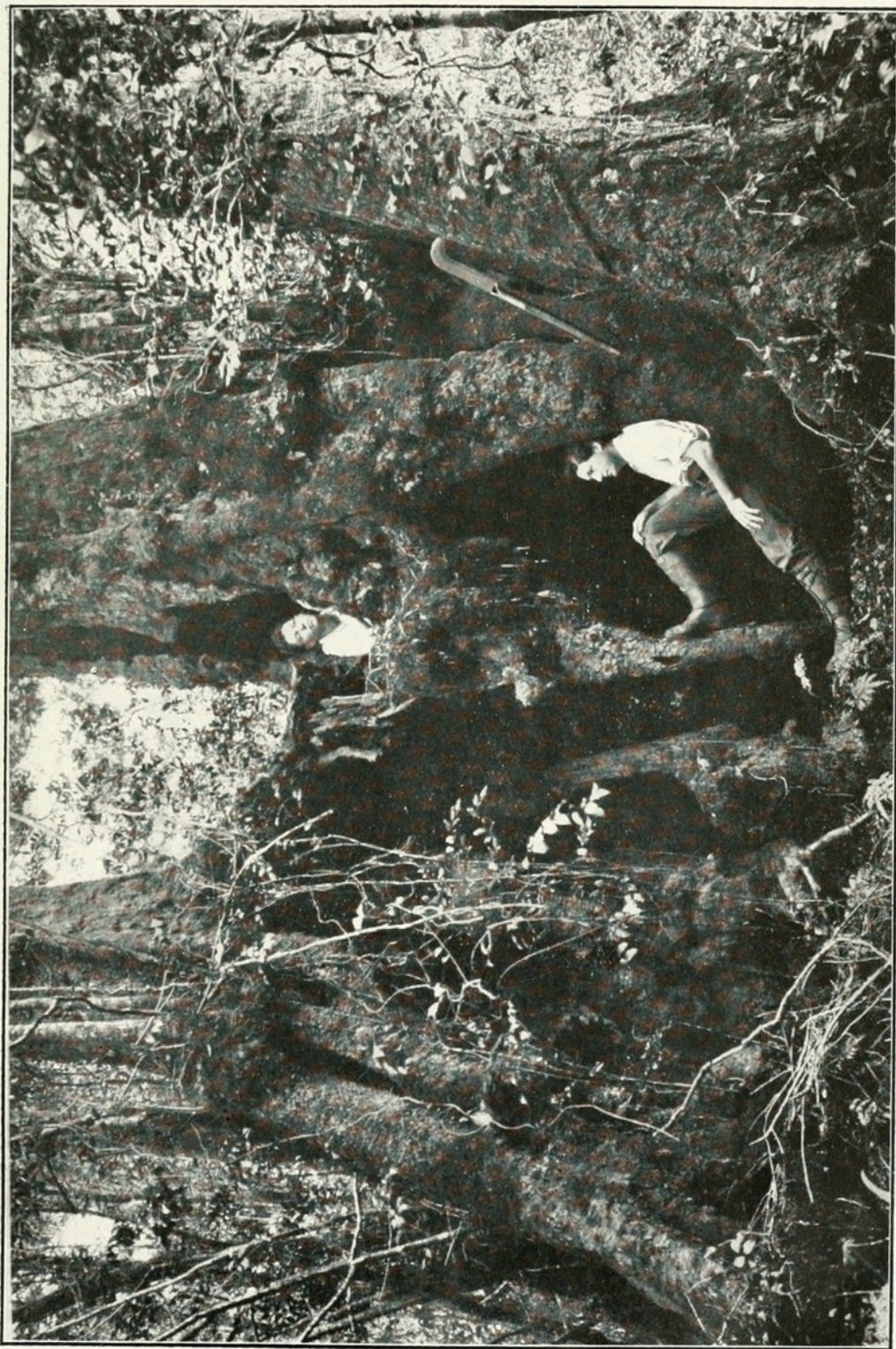
Three other nests were discovered during the present trip, two of which appeared a few seasons old, but were nevertheless collected; they contained the unmistakable wood-pulp lining. They were both built in small tree-ferns on the steep bank of a creek, one being placed 9 inches from the ground and the other 12 inches up—new situations in which to be found. One nest was found within 20 inches of an old nest of the Albert Lyre-Bird. The third nest was a new one, and placed 9 inches up from the

ground in the more usual position—in a clump of the long, flat-leaved rush or scrub-grass, on the crest of the range, and a long way from any creek. We were very disappointed over this nest, because, instead of containing two eggs when visited on 29th October, it was pulled to pieces and the wood-pulp lining was lying in pieces before it, together with several feathers of the parent bird. All pointed to a tragedy. Some nest-robbing marauder (such as a native cat) had undoubtedly been at work. Probably many nests are treated in this manner. I took a photograph showing the nest thus destroyed *in situ*. This damaged nest, together with the clump of scrub-grass and feathers from the destroyed bird, was collected.

Four species of snakes were frequently met with—namely, Black, Tiger, Copperhead, and Carpet—the first two being the most plentiful. We killed about 30 of these venomous reptiles. No doubt Scrub-Birds and other ground-feeding birds are frequently devoured by them.

On this visit to the Macpherson Range we located upwards of 30 male Rufous Scrub-Birds during many extensive tramps through the jungle, backwards and forwards over the range and gorges for many miles. The continual rain brought many scrub-snails or land-shells out of their hiding places, including the large species known as *Panda falconari*, which forms food for the Lyre-Birds. Strange to relate, the smaller markings on this pretty scrub-shell closely resemble those on the tail feathers of *Atrichornis*; this is a curious coincidence, as I have always found the *Atrichornis* frequenting the same scrubs wherein this particular species of snail has come under my notice. Altogether, six nests of the *Atrichornis* composed of, and built in, the flat-leaved scrub-grass have been discovered, and three that were placed in different situations; these are the only nests so far recorded.

Not far south-west of the camp, on the Queensland side of the range, is a great valley known as the Albert River Gorge; this reminded me of the Barron River Gorge, near Cairns, North Queensland. One day, from the top of a great precipice overlooking this magnificent chasm, we heard Scrub-Birds and many others calling about 2,500 feet below us, in the dense jungle. It is wonderful how sound travels up from such a depth! Flocks of 20 to 40 large Topknot Pigeons (*Lopholaimus antarcticus*) flying over the Albert River looked more like Sparrows, but the field-glasses settled the identity. A White Goshawk (*Astur novæ-hollandiæ*) flew over the trees below as a white speck, and travelled so fast at times that it was difficult to see it with the glasses. The noise from the running water in the river, about 3,000 feet below, could be heard plainly. A few days later we ventured below into this great gorge. The descent was steep, and progress was hampered by the loose earth and stones, on which it was almost impossible to get a footing. Saplings, limbs of trees, vines, and roots proved invaluable as hand-grips. After descending about 1,000 feet we heard our first *Atrichornis*, but



Butt of Giant Beech-Tree (*Fagus Moorei*).

it ceased calling when we were about 100 yards away. Going in his direction we heard the note of a female, and presently saw her among a mass of fallen palm fronds. She was close to us, and we had a good sight of her rusty breast; we did not disturb her. The locality resembled that where we obtained the nest, egg, and female at Tom's Creek. There were many ledges of dripping rock covered with large-leaved reeds, birds'-nest ferns, &c. Piccabeen or Bangalow palms (*Archontophoenix cunninghami*) were in rich profusion, and their fallen fronds covered the ground to a depth of fully 2 feet, and were difficult to get over without noise. Here the humid heat was severe, and the perspiration simply ran off us. Not hearing the male *Atrichornis* call again, we made our way towards another bird calling below us. We found it in a gully, which was the "real home of rolling stones." The trees were scarred with blows from boulders coming down this steep place. It was devoid of much undergrowth, and dislodged rocks were everywhere, showing what a dangerous place it was to explore. The bird was calling loudly about 30 yards away, and as we approached we stood on a flat rock. From a cavity under this rock came the unmistakable faint "ticking" note of a female, accompanied by excited fluttering, which lasted several seconds. Then she suddenly hopped into view and disappeared among some tall, wide-leaved rushes. When fussing about, her tail was rather well cocked, and wings drooped. After she called, the male ceased calling, came down within several yards of us, called once, and finally disappeared down the gully. As at the Tom's Creek nest, this locality of rock cavities seemed more suited to Rock-Warblers (*Origma rubricata*) than to *Atrichornis*. In the scrubs of the Dorriggo and Richmond Rivers, in New South Wales, I have never known Scrub-Birds to frequent rocky places; probably here rock-cavities are retreats for them in times of danger.

On the steep side of the Albert River Gorge we found some mounds of the Scrub-Turkey (*Catheturus lathamii*). It amazed me to find them in such a place. Portion of one of these mounds had slipped down the steep side fully 50 yards. The climb back up the steep side of this gorge was a heavy one, and took us nearly three hours. At each step the loose earth and stones gave way under our feet as we struggled on and grasped at anything for support. During the climb thousands of large broken scrub-snail shells (*Helix falconari*, *H. dupuyana*, and *H. muhlfeldtiana*), which Lyre-Birds and others had smashed, were seen. Lyre-Birds frequently scratch for their food on sloping ground, as it renders the work much easier for them.

A few miles to the south-east of the camp stand Mount Bithongabel and Mount Wanungara, from which a splendid view is obtained of the Tweed River district and the dense scrub thousands of feet below in New South Wales. While standing on the great precipice forming the eastern face of the latter mountain we heard several *Atrichornis* calling straight down below us, exactly at the same places as we heard them in 1919.

Red-bodied blow-flies were common, and deposited their eggs on clothes, blankets, food, and anything; they loved the coolest parts of the range. March-flies of several species frequently stung us severely; specimens were collected for identification. They form food for many of the birds.

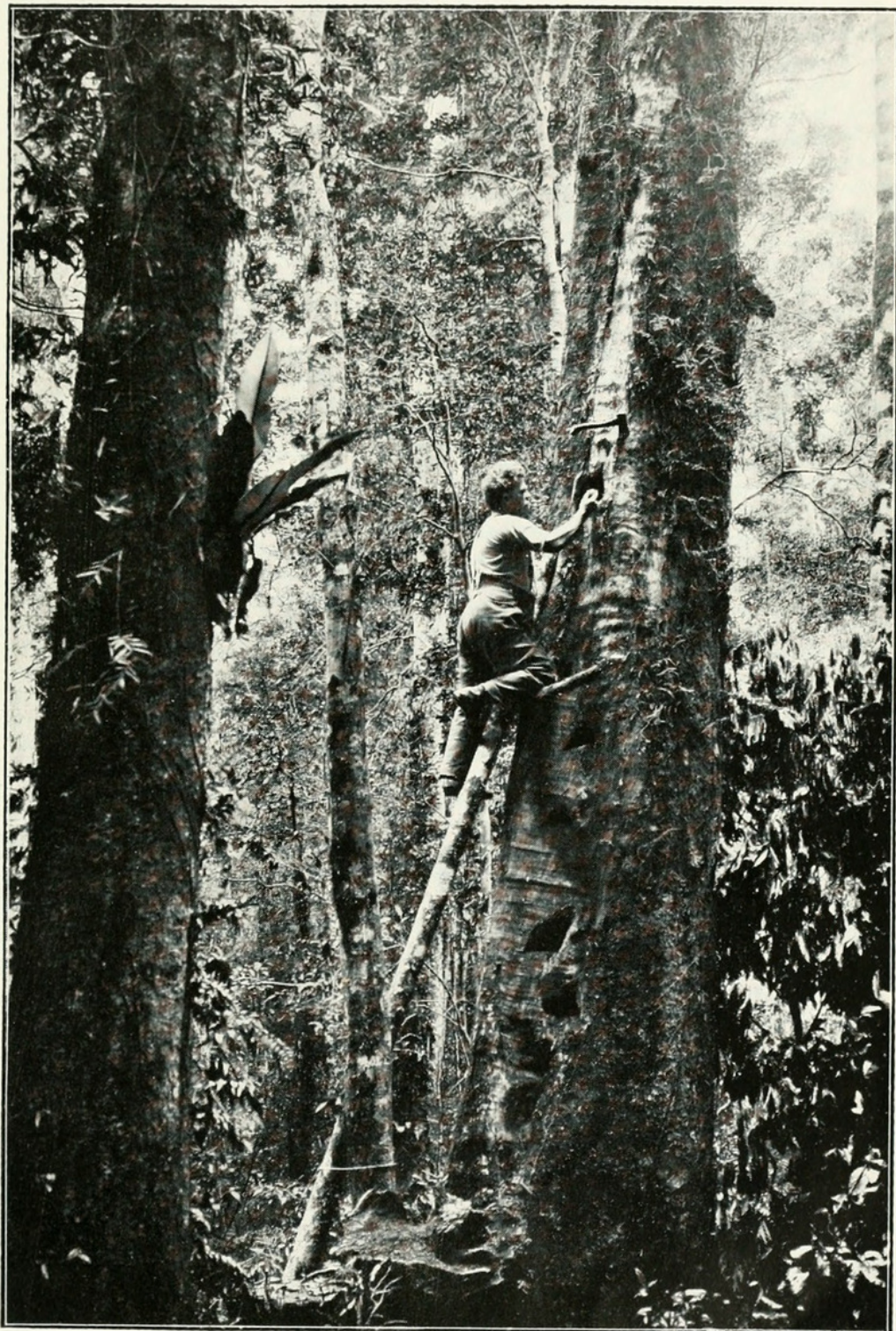
The three young Scrub-Birds obtained on this trip make a unique series, as they are of different ages—about three, five, and eight weeks old respectively. In the bodies of the two oldest the male organs are discernible, but the youngest bird shows nothing. Judging from my experience, one would assume that the young of this species grow and develop very fast, and don their adult plumage very early.

The bird lays an enormous egg in comparison with the size of its body, and consequently, when hatched, the young one is well advanced, and grows fast. This is possibly the reason why the sexual organs develop so early compared with the young of much larger species. The note of the young bird is different from that of the adults; it resembles the sound produced by suddenly drawing the finger-nail across a rough or rusty lid on a small empty tin 3 or 4 inches high.

The three young birds were collected on the following dates:—
(a) No. 1 (male), about 8 weeks old, collected 2nd November, 1920; (b) No. 2 (no sex), about 3 weeks old, collected 4th November, 1920; (c) No. 3 (male), about 5 weeks old, collected 29th October, 1920. These three specimens, in the flesh, gave the following descriptions and measurements (millimetres);—

(a) (Young male)—total length, 178; wing, $64\frac{1}{2}$; tarsus, 20; bill to base of gape, 20; tail, 69; upper mandible dark horn, lower mandible yellow; eyes dark slaty brown (not coffee-colour like adults); gape of mouth yellow; inside mouth whitish; legs brownish-horn; feet pale brownish-horn; under feet pale yellow; edges of wing feathers and wing coverts of a darker chestnut or reddish-brown than in adult birds; no black patch showing on breast; patch of rufous on abdomen much larger than in adult male; throat whitish. Two young ones were noticed at an altitude of nearly 3,900 feet with the mother; they were shy and wary. We secured one young one, and did not interfere with the other or the mother. Once we were within 8 feet of her, and she excitedly rendered the usual "ticking" note. The young one on several occasions made an attempt at mimicking, and caused us much amusement, especially when he tried the notes of the Olive Thickhead, which was calling close by. His attempt, however, was not altogether a failure. Scrub-Birds apparently start their mimicking antics early.

(b) (Juvenile, no sex)—total length, 129; wing, 54; tarsus, $17\frac{1}{2}$; bill to base of gape, 16; tail, 38; upper mandible dark horn, lower mandible yellow; eyes dark slaty-brown; gape of mouth rich yellow; inside mouth yellow; legs, feet, and claws very pale horn; under feet pale yellow. This is the smallest and youngest speci-



Nest of King Parrot (*Aprosmictus scapulatus*).

men of the three young birds secured. The colour throughout is a pale reddish-brown.

We saw two young birds together; they uttered a peculiar rasping or squeaking note, as described, became very excited, and kept their short tails well cocked up. They hid for nearly an hour in the dense weeds known as *Polia crispata* and *Elatostemma reticulatum* growing in the creek and on the adjoining parts. We succeeded in disturbing the birds by throwing stones into the weeds and ferns. They were very active, and, although the mother was with them, she kept well hidden; we frequently heard her call in the weeds and *débris*. Eventually these two young birds got on a small rotten log lying across the creek, and almost covered with the weeds; they ran along this rapidly, and then, like "feathered mice," went up the almost perpendicular bank. When up about 4 feet they flew, or rather fluttered, down into the weeds in the creek, and joined the mother, who was still hiding. This fluttering down surprised me much, considering the birds were so young. No doubt our presence and persistent hunting caused them to do so. We at last captured one young one in a hole under the foot of a tree standing on a steep bank, at an altitude of about 3,000 feet. When captured it died in my hand almost immediately. It is a fine specimen, and in colour and size a big contrast to specimen (a).

(c) (Juvenile male)—total length, 168; wing, 63; tarsus, 19; bill to base of gape, 19; tail, 69; upper mandible blackish-horn and pale brown horn at tip, lower mandible all yellow; eyes pale brownish-slate; gape of mouth very rich yellow; inside mouth yellow; legs and feet pale brownish-horn, with yellowish tinge; claws pale brown; under feet yellow. The plumage is more advanced than in specimen (b), but not nearly so much developed as in specimen (a). Underneath, on the *left side* of the breast, the feathers have started to become rufous, and the bird is different in colouring compared with the adult male. It was the curious note of this young bird that attracted my attention, this being the first young one found. Great difficulty was experienced in securing it, on the crest of the range, at an altitude of about 3,400 feet.

Early in December a female was making her "ticking" note at an altitude of about 3,200 feet, and, in order to see her, a tree was climbed. We plainly saw her below, some 30 feet away, with two young ones. They were busy feeding and picking from ferns and old rotten logs. They remained only a few seconds in one place. They were active, and their movements remarkably rapid. The mother moved on quickly through the dense undergrowth, rendering her little note now and then until she was beyond hearing. While this was going on the male was calling loudly some 100 yards away to the west; they travelled in his direction.

It seems remarkable that it has taken 55 years to bring the young of the shy and interesting Scrub-Bird to light.

OLIVE THICKHEAD (*Pachycephala olivacea macphersonianus*).

The first recorded specimen of this shy bird was collected by me near Mount Bithongabel, in 1919, and was described in *The Emu* for April, 1920, by Mr. H. L. White. We discovered on this trip that these birds did not come below the 3,800 feet level. Above that level the trees and vines are festooned with luxuriant and wonderful shawls of long hanging moss, usually glistening with moisture, supplied by clouds and mountain mists which frequently envelop these higher portions. The various mosses must run into dozens of different species. It is a fascinating paradise of moss.

During our twelve weeks' rambling through these jungles we located only seven pairs of birds, usually a good distance apart. The food chiefly consists of beetles, small insects, grubs, and caterpillars, as well as small seeds.

When leaving a tree the bird often appears to fall or fly almost straight down; it then travels or swoops along rather close to the ground, usually amongst the dense undergrowth, and is lost until it calls again. It lives where the undergrowth is extremely dense and the ground steep. The birds move so quickly and unobtrusively that it becomes tantalizing and disheartening to a person who, after wriggling and crawling on hands and knees through dripping wet moss-covered logs and rocks, as well as prickly and treacherous vines and bushes, finds on each occasion that the bird has vanished, and the whole work has to be repeated. The most troublesome vines to get through are the wire-vines (*Rhipogonum Fawcettianum*), the lawyer-vines (*Calamus australis*), and the barrister-vines (*Mezoneuron Scortechinii*). A person cannot cut his way through with a brush-hook, as too much noise is created, and using a knife is slow.

This Thickhead is the most active and restless of the genus that has come under my notice. We obtained one pair of the birds, a male and a female—the only specimens extant, except the single specimen secured in December, 1919. The birds gave the following descriptions and measurements (millimetres):—(a) Adult male, collected on 12th October, 1920, altitude about 3,860 feet; (b) adult female, collected on 9th October, 1920, altitude about 3,860 feet. Both birds were obtained at the same locality, and represent a mated pair; this was done in order to avoid breaking up two different pairs. (a)—Total length, 209; wing, 100; tarsus, 26; bill, 22; tail, 95; upper and lower mandibles blackish-horn; eyes reddish-brown; legs brownish-horn; feet silver-grey; feet pale yellowish underneath. Gizzard preserved, and contained chiefly the remains of beetles. Palate covered with many pale flesh-coloured spines, pointing towards the throat. (b) Total length, 213; wing, 101½; tarsus, 30; bill, 22; tail, 98; upper mandible blackish-horn, lower mandible much paler; eyes coffee-colour; legs and feet silver-grey; under side of feet pale yellow; numerous small seeds and remains of beetles in gizzard.

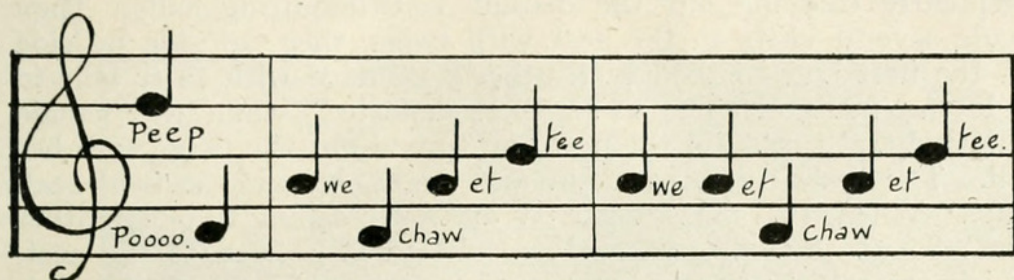
The bird had a variety of notes. One very sweet one was a slow, soft, and long-drawn-out call resembling "P-e-e-p—p-o-o-o-o."



Spice-Bush (*Helicia Youngiana*), where Northern Olive Thickheads build.

PHOTO. BY S. W. JACKSON, R.A.O.U.

These notes were rendered slowly, and the "P-e-e-p" was rather high pitched, while the "P-o-o-o-o" was a low note, as shown :—



The "P-o-o-o-o" somewhat resembled the sound produced by running a wet finger around the top of a thin champagne glass and removing it quickly. The notes were difficult to locate, the sound appearing to be coming from any direction in which you turned an ear. While thus calling the bird often ventriloquized, and the sound appeared about a quarter of a mile away instead of, perhaps, 15 or 20 feet. Only that we had many times observed its throat moving as the sound was produced, we would have concluded that the call was made by another bird some distance away. The bill was *closed* when this distant sound was being produced. The notes rendered most frequently by these birds resembled "We-chaw-et-tee" and also "We-et-chaw-et-tee." There was a longer pause on "Chaw," the lowest-pitched note of the series, and the note "Tee" was the highest. The notes were drawn out slowly and sadly, and were indeed extraordinary and difficult to describe. The bird also ventriloquized with this last lot of notes. Both birds seemed to have the same calls. Another call often resembled "O'wheat," repeated from four to nine times or more, rapidly, each one getting faster and faster and louder and louder, the last few notes being very loud, while the first few were exceedingly soft and low. Sometimes the note was given without the "O" in front, thus sounding "Wheat," and in some instances it was rendered as "Too-wheat." The birds seldom called more than about 150 yards apart, and were local in their habits, each pair keeping to a particular section of the jungle. As a rule they kept up in the moss-clad trees about 20 to 40 feet, though we have observed them as high as 80 or 90 feet.

The first nest found was an old one, 4 feet up on a horizontal branch of a yellow-wood tree (*Daphnandra micrantha*). The first new nest was found on 14th October, and we enjoyed watching the birds with field-glasses. They called all the time while collecting material and bringing it to the nest, which was placed about 3 feet up in the middle of a flowering spice-bush (*Helicia Youngiana*) entwined and overgrown with wire-vines. This carefully hidden nest was discovered through our observing the female carrying a curved twig fully 10 inches long. Sitting on a moss-covered log, she ran this through her bill, and we could distinctly hear the cracking as she did so, no doubt to give it a greater curve; then she flew up into the bush, and the nest was

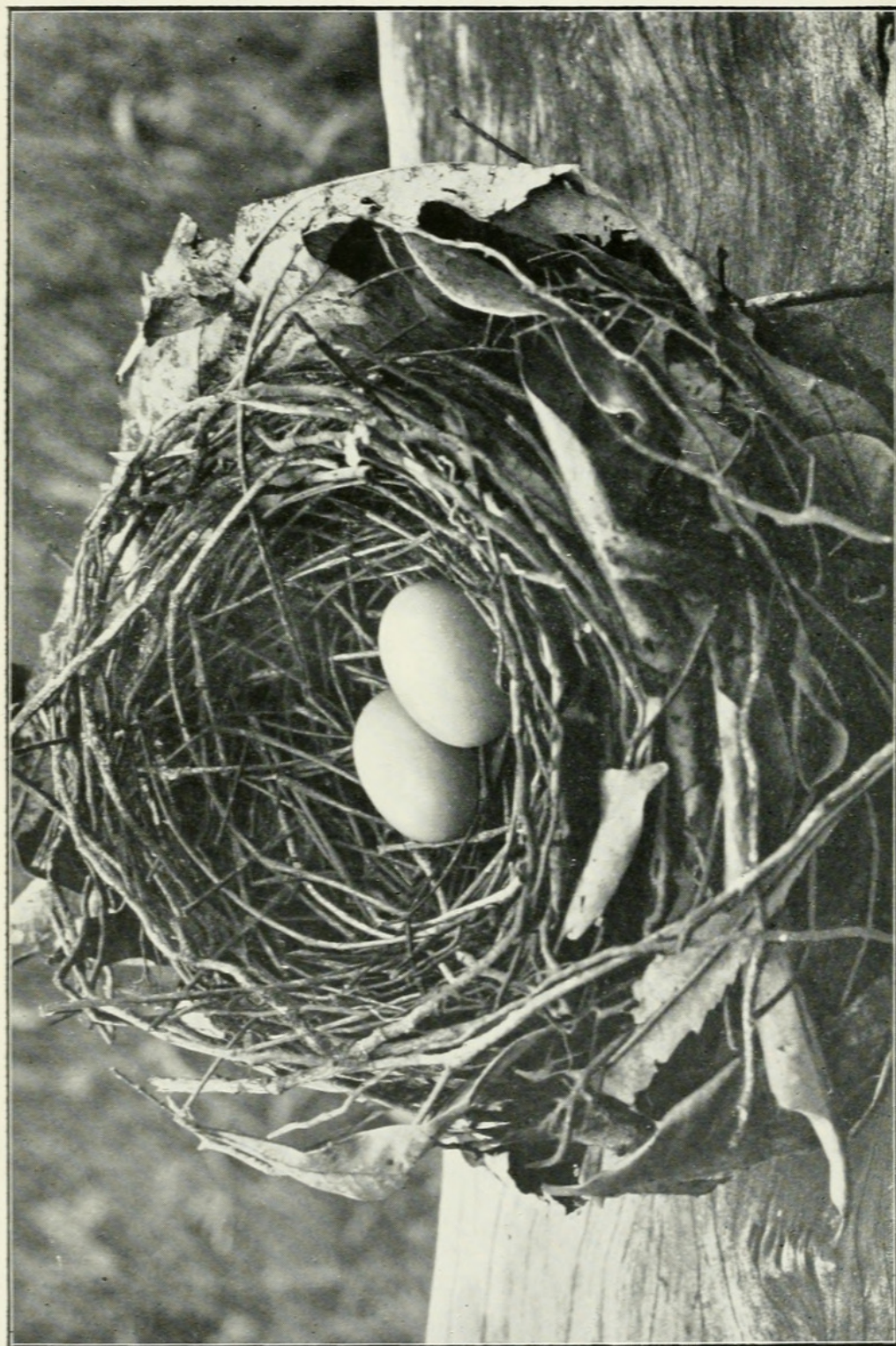
at once located. She soon departed, and both birds came back with material, whistling to one another all the time, the male frequently carrying out the distant ventriloquizing calls. They made several visits to the nest with twigs, then sat side by side on the nest and combed each other's plumage with their bills in a loving manner. The male then departed, while the female fluttered and turned in the nest and spread out the twigs with her bill. The male returned again and again, bringing a twig each time. When both birds departed, and were calling to one another some 80 yards away, we made a hurried inspection of the nest, which apparently had only been started that day, and then left the place. The nest and locality were strictly tabooed for ten days, none of us going within hundreds of yards of the spot. A visit was made on the 25th October, the morning after a great cyclonic storm accompanied by severe hail. My expectations and fears were only too well founded. There was the nest—a large, completely built, and beautiful structure, containing one fresh egg—smashed beyond repair. In it also were fresh green leaves, which the hail had beaten in after driving the bird from the nest. Not a sign of the Thickheads could be detected, though we watched and listened for over an hour. The storm had ruined and upset everything. The broken egg and green leaves were carefully removed with a pair of forceps, the nest being left for the time being. During our wanderings we found another new nest containing one fresh egg, badly smashed. The day before another hailstorm had passed over the locality and played havoc with the scrub. This damaged egg was also secured. The nests resemble some of those built by the Harmonious Thrush (*Collyriocincla harmonica*) and Crested Bell-Bird (*Oreoica cristata*).

However, perseverance and hard work won us success at last, and on 28th October we found the same birds building about 200 yards from the first nest. Now and then the male on the ground immediately under the nest would carry on his far-off ventriloquizing notes. We kept well behind a great clump of large beech trees (*Fagus Moorei*), on which were many large orchids (*Dendrobium fagicola*) with a mass of creamy-white blossoms. The nest was built 3 feet up in a spice-bush covered with beautiful blossoms, over which were large-leaved wire-vines. It resembled the other three nests in every detail.

On 6th November we disturbed the female, and found a lovely clutch of three eggs, comparatively large and fresh—the only clutch extant. A description by Mr. H. L. White of the nest and eggs appears in another part of this issue of *The Emu*. The female was tame, and allowed me to get within a few feet before she flew off. When I was removing the eggs she flew at me several times. While we were at the nest the light in the jungle was very bad, owing to the heavy mist, and everything was wet. An hour later a heavy hailstorm passed over the place, and, had the eggs been there, all would have been smashed again.



Nest (*in situ*) of White-throated Thickhead (*Pachycephala pectoralis*).



Nest of Cat-Bird (*Ailuradus viridis*).

VARIOUS OTHER SPECIES.

The beautiful Rose-breasted Robins (*Petroica rosea*) were plentiful, and their feeble, sweet notes were heard daily. The male uttered a call resembling "E-tun-t-nud-i-dee—tee-tee-joeey"; while the notes of the female were "E-tun-t-nud-i-dee—tee-tee-tee." We found one of their small and handsome nests at an elevation of nearly 3,900 feet—the first nest observed in Queensland, as far as can be ascertained. It was fully 60 feet up, near the end of a horizontal branch of a tall tree parasitical on tree-ferns, and known to science as *Quintinia Sieberi*. It starts its growth, as a rule, on a tree-fern. The tiny nest was found by watching the female, who made several trips to it within a few moments, and was busy putting cobwebs over the outside of the structure. She was very rapid with her work, and with the field-glasses we got a splendid view of her. The lovely male bird did not go near the nest or assist in building it. Unfortunately, the great cyclonic storm of 24th October smashed this nest to pieces; it was completely cut off the limb by the heavy hail and wind.

Satin Bower-Birds (*Ptilonorhynchus violaceus*) and Regent Bower-Birds (*Sericulus chrysocephalus*) were fairly common, and we found a new nest of the latter in the suckers on a damaged rosewood-tree (*Dysoxylon fraserianum*) on top of a range at an elevation of 3,900 feet; but, owing to our passing frequently near the tree while watching a young *Atrichornis*, the bird deserted the nest. It was very unfortunate, as I hoped to photograph the eggs *in situ*. The bird was seen busily building the nest on two occasions. Several play-grounds of Satin Bower-Birds were discovered, and the variety of ornaments of decoration therein was interesting; among these were dead scrub-snail shells (*Helix confusa*, *H. porteri*, and young of *Panda falconari*), blue Parrot feathers, blue star-shaped flowers of a scrub bush known as the kangaroo apple (*Solanum aviculare*), fungi of different species, blue berries, flowers from the spice-bush, empty pupa skins of the *Cicada*, and cast-off snakeskin. In a play-ground near our camp were displayed, among other things, the hard brown outside skin of onions, pieces of blue paper, and twine. Two nests were found in the tops of tree-ferns, but these belonged to a previous season.

Cat-Birds (*Ailurædus viridis*) were plentiful, and did not call much until about the end of October. The cry resembles that of a domestic cat, and at times reminds one of the delicate little cry of a young baby. The bird makes a comparatively large and deep cup-shaped nest, composed of sticks and twigs, and then layers of large dead leaves, many placed around the nest perpendicularly on their edge, probably to permit moisture to drain away easily. On examining a deserted nest we were surprised to find, about 1 inch below the thin stick lining, a layer of wet, decayed wood, some pieces measuring over 2 inches long by a half inch thick. This wet wood filled two 2-lb. jam tins, and, after

drying in the sun thoroughly, was with difficulty pressed into one of these tins. Probably this wet layer is instrumental in promoting heat when the female is sitting on the nest. Under the wet wood were large dead leaves, some measuring 9 by 3 inches, and belonging to a scrub-tree known as "Maiden's Blush" (*Echinocarpus australis*). Many nests were found, mostly in the top of a tree-fern. One was carefully situated in a satinwood-tree (*Zanthoxylum brachyacanthus*), which is very prickly and impossible to climb in the ordinary way, owing to the numerous sharp thorns covering the trunk and limbs. I have known Regent-Birds to build in these trees in the Richmond River scrubs of New South Wales.

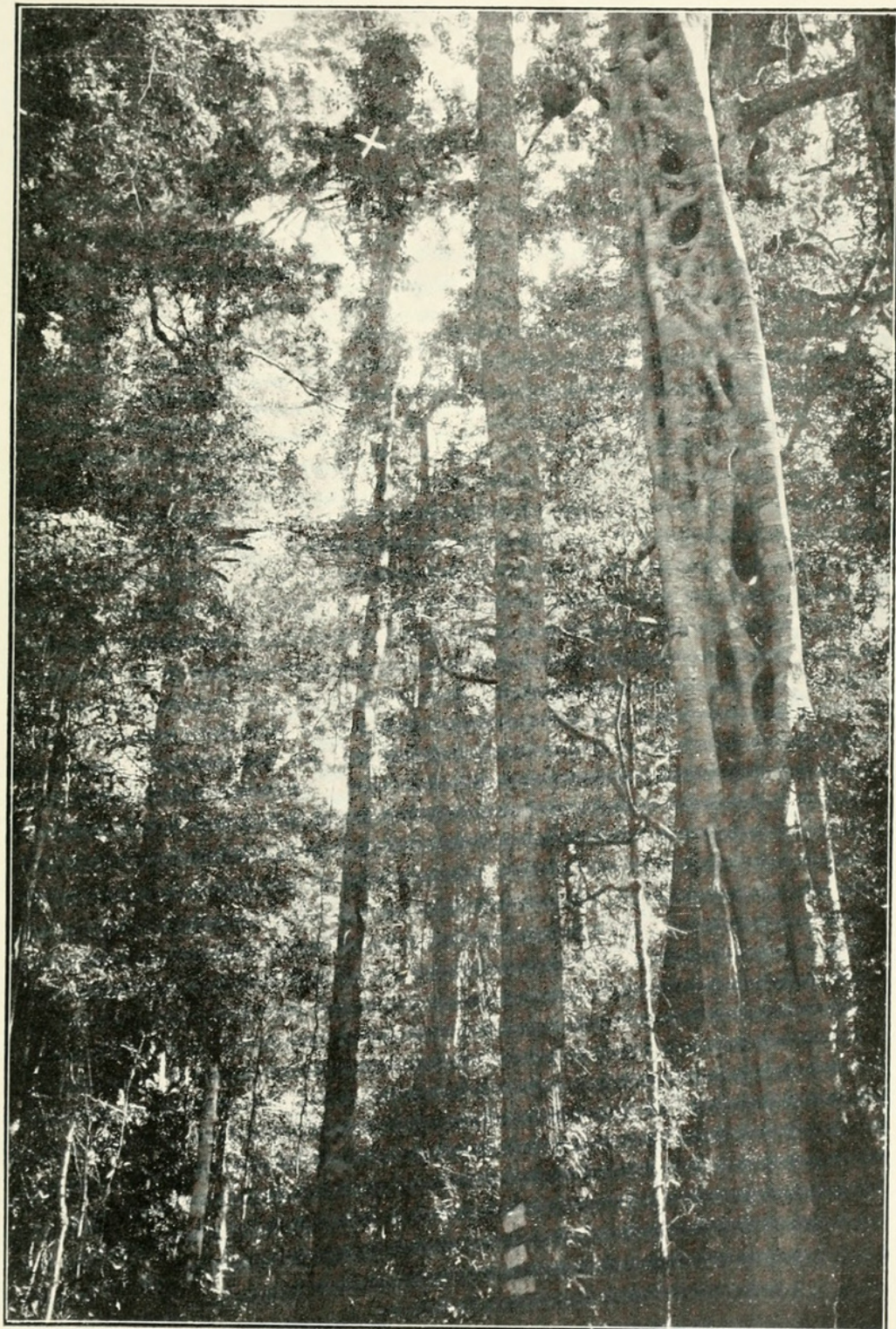
One morning, early, a Large-headed Robin (*Pæcilodryas capito*) came into our camp while we were having our early breakfast. It appeared a rare bird here. One nest was found, and it contained many small pieces of skin or scales, proving the young ones had gone.

Yellow-rumped Robins (*Eopsaltria chrysorrhoa*) were plentiful, and their notes were usually the first to be heard in the morning and the last in the evening. They flew about until almost dark. Their beautiful nests were sometimes neatly built in between the fronds on the top of tree-ferns.

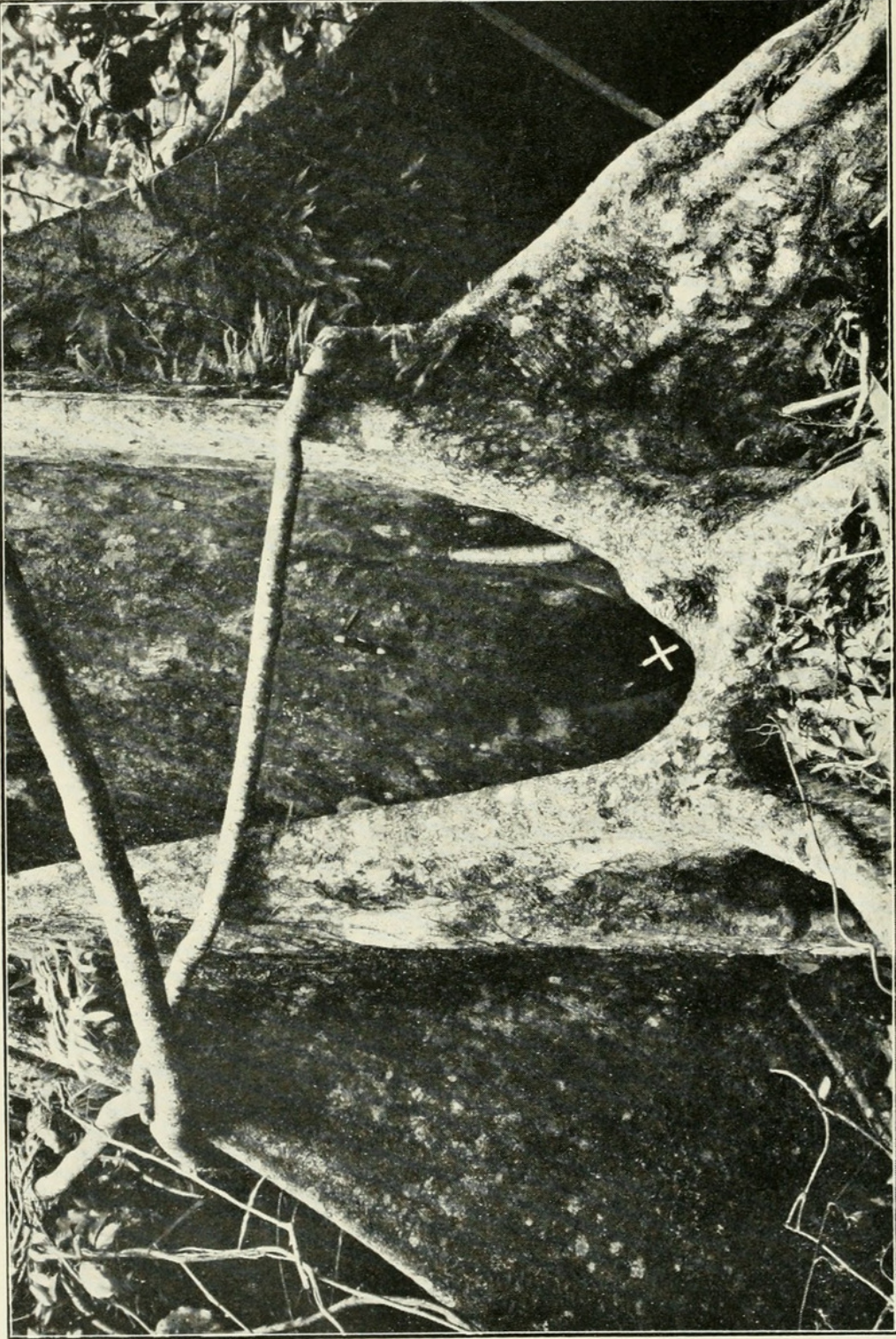
The Albert Lyre-Bird (*Menura alberti*) was daily seen, and a few old nests discovered. Once we saw three birds together; this is unusual. They made a great noise, and scattered quickly when they saw us. One day a pair was carrying on mimicry near a gigantic scrub box tree (*Tristania conferta*), which I photographed; it measured over 50 feet in circumference 6 feet up from the ground. Lyre-Birds had been scratching and feeding among the dead leaves around this jungle giant.

When suddenly disturbed this Lyre-Bird makes a peculiar whistle, "loud and sudden," and then usually resorts to a tree as a means of escape; it hops from limb to limb until it is often 50 feet up. Then there are times when it will run away through the jungle. Its early morning note resembles "Ch-EEK—ch-ack—ch-ook—ch-ock—ch-ook—wit." These notes vary from about five to seven generally, and each one, as *slowly* rendered, gradually goes down the scale until the note "Wit" is reached, which is a sudden contrast, as it is suddenly sounded in quite a high-pitched whistle. The birds are great mimics, and can mock almost any bird or sound they hear in their haunts.

Rifle Birds-of-Paradise (*Ptilorhis paradisea*) were frequently seen, but were seldom recorded above the 3,800 feet level. On 28th November an adult male and a female were observed in company with two young ones. Except that they were paler in colour, the young resembled the adult female. Their call was rather different, and more "rasping," than that of the adult birds. The handsome male birds appear more plentiful than the females. One day we saw two of the latter hopping up the trunk of a large scrub tree known as bolly gum (*Litsea reticulata*)



The × denotes position of Rifle-Bird's Nest.



The x denotes bathing place of Rifle-Birds.

The vine above is where they preened their feathers after each wash.

and collecting insects from underneath the scaly bark thereon. This tree contains very light and useful timber, and is not connected with the eucalyptus or gum trees of our forests. During this trip I photographed the lower portion of a large marara tree (*Ackama Muelleri*), showing the "water-pocket" in its trunk, in which the handsome male bird was seen bathing. One's attention is often directed to these birds when they are feeding, as they make a great noise at times while scratching amongst the *débris* inside the large cup-shaped hollows of the birds'-nest ferns (*Asplenium nidus*) and elk-horn ferns (*Platy-cerium alcicorne*) up in the large trees. The large staghorn ferns (*Platy-cerium grande*) keep more to the lower elevations of the range.

Spine-tailed Log-runners (*Orthonyx spinicauda*) were plentiful, and some plundering creatures—probably dingoes, foxes, or native cats—destroyed many nests and contents. I am sorry to record that the fox has at last found his way into this scrub, and am afraid the Albert Lyre-Birds and other ground species will suffer greatly. This bird usually builds its domed nest on the ground, or close to it, though we found one placed 4 feet up in a thick bush. In one nest we found a young bird, partly covered with black down. The sides of the mouth, up to within a quarter of an inch of the tip of the bill, were covered with a thick, *white*, and projecting skin, giving the mouth a swollen appearance. The inside of the mouth and tongue were yellow. Probably this white inflation around the mouth is Nature's method in assisting the parent birds while feeding their young in the dark covered nest. After examining the young one it was replaced in the nest.

Many more species were met with, but space does not permit mention of them.

In conclusion, I may state that the photographic work was carried out under great difficulties, owing to the continual rains and gales, and in some instances I was reluctantly compelled to photograph various subjects when they were "wet." The nest of *Atrichornis* shown here, on the bank of a creek, and from which an egg was obtained, is an example of a wet subject, and rain had not long ceased when the photograph was taken; and, further, the light in the dense jungle was very poor.

Colour Change in the White-bellied Sea-Eagle.—At the end of 1910 the Sydney Zoo received what we took to be a pair of Sea-Eagles from Mackay, for one was uncoloured and was taken for a female; but last year (1920) this bird partially coloured out, and now has the grey back and the white under parts of the fully plumaged male. It thus remained for ten years in the brown immature dress.—A. S. LE SOUËF. Taronga Park, Sydney (N.S.W.), 10/3/21.



Jackson, Sidney William. 1921. "Second Trip to Macpherson Range, South-East Queensland." *The Emu : official organ of the Australasian Ornithologists' Union* 20(4), 195–209. <https://doi.org/10.1071/mu920195>.

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