A SMALL WOODHEN FROM NEW ZEALAND

By R. J. SCARLETT
Canterbury Museum

ABSTRACT

A new woodhen, smaller than **Gallirallus minor** (Hamilton) is described.

DISCUSSION

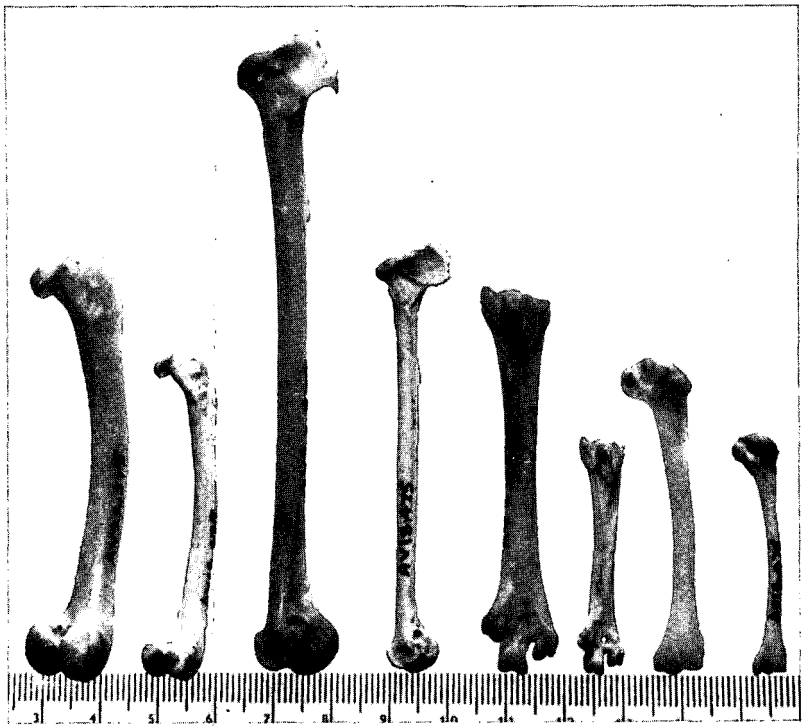
At some time in New Zealand's past, probably in the late Pleistocene or early Holocene, an "explosion" of Ralline forms seems to have taken place. A number of these small birds are at present known from one or two bones only. It is unwise to give them names when the material is so scanty; e.g. a humerus from one cave may or may not be of the same species as a femur or tibio-tarsus from another cave. Nearly all this new material is of limb or wing bones: the cranial, pelvic and sternal bones have yet to be found.

However, there is sufficient material of one new species, although represented only by limb bones, for it to be described and named.

The bones all came from the one cave, which the late W. H. (Bill) Hartree named "Te Waka No. 1."

[Frank McGregor

Plate II — Larger bones: R. femur, L. tibio-tarsus, R. tarso-metatarsus, R. humerus of **Gallirallus australis greyi** AV 22,575, Anterior aspect. Smaller bones: Ditto of AV 18,475, Holotype of **Gallirallus hartreei.**



[Frank McGregor

Plate III — Larger bones: R. femur (posterior), L. tibo-tarsus (side), R. tarso-metatarsus, R. humerus (posterior) of **Gallirallus australis greyi** AV 22,575.
Smaller bones: Ditto of AV 18,475, Holotype of **Gallirallus hartreei.**

The cave is in a deep formation of Waitotaran limestone, at the side of a valley, in the Te Waka area, about 30 miles from Napier, and about 12 miles in a more or less northerly direction from Patoka, Hawke's Bay, at a height of 4,500 feet. Bill Hartree had a map reference, but it is not available to me now. The stratification is as follows: A foot or two of post-Hatepe soil and debris, followed by two feet to two feet six inches of the greyish pumice lapilli of the Hatepe shower. Below this is an accumulation of varying deposits of limestone dust, fallen limestone rock and slabs from the roof, plentifully interspersed with bone, then the coarse, purplish lapilli of the Waimihia pumice shower. Beneath the Waimihia the deposits extend to an unknown depth. Bill Hartree had worked down to a depth of sixteen feet near the entrance, having to break large slabs of limestone with a sledge hammer, for removal, before his death. The bones to be described were gathered by Bill and myself in 1958 and 1959. It is unlikely that I shall be able to visit the cave again to search for more.

AV 18,475: R. and L. femora, L. tibio-tarsus, R. tarso-metatarsus, R. and L. humeri, of an individual bird. Te Waka No. 1, below the Hatepe lapilli of 1900±50 B.P. (50 A.D.). 27 to 29 May 1958. W. H. Hartree and R. J. Scarlett.

AV 18,476: Proximal and distal ends of a R. tibio-tarsus (part of the shaft is missing). Te Waka No. 1, below the Waimihia lapilli of 3430±50 B.P. (1480 B.C.). 25 May 1959. W. H. Hartree.

AV 18,477: L. femur. Te Waka No. 1, below the Hatepe lapilli. 27 to 29 May 1958. W. H. Hartree and R. J. Scarlett.

AV 18,478: L. femur. Te Waka No. 1, below the Hatepe lapilli. 1959. W. H. Hartree.

The bones are similar in size to, but differ in shape from, the bird I described as *Rallus hodgeni* (Dr. W. R. B. Oliver placed the later in a new genus, *Pyramida,* but I now know that it belongs in Dr. R. A. Falla's genus, *Capellirallus*). Although much smaller than the living woodhens or wekas, and the extinct *Gallirallus minor* (Hamilton), the bones otherwise are so typically of *Gallirallus* form that I have no hesitation in placing the new bird in that genus, despite the absence of cranium and bill, pelvis, and sternum, and have much pleasure in naming it in honour of the late Bill Hartree, as *Gallirallus hartreei.*

AV18,475, is the Holotype, and AV18,476, 18,477 and 18,478 are Paratypes.

Gallirallus hartreei n.sp.

		L.	P.		M.	D.
Femur						cm
Right	AV18,475	5.9	1.025		0.410	1.1
Left	AV18,475	5.925	1.0+*		0.410	1.1
Left	AV18,478	5.6	1.0		0.4	1.0
Left	AV18,477	5.4	1.0		0.45	1.0
Tibio-tarsus				Cnemial crest		
Right	AV18,476	7.510	1.10	1.4	0.4	0.775
Left	AV18,475	7.510	1.10	1.4	0.4	0.8
Tarso-metatarsus						
Right	AV18,475	4.125	0.8		0.4	0.85
Humerus						
Right / Left	AV18,475	4.2	0.8		0.25	0.6

* Very slightly abraded on articular head.

All the limb bones are miniatures of those living wekas, as will be apparent from the photographs.

The *femur* is expended proximally and distally, with a typical twist or torsion of the shaft. On the dorsal surface, the trochanter major is well produced, with a distinct "lip." On a straight line drawn on the proximal end the inner curve of the trochanter major occurs at approximately 4/10 of the total width. The upper condyle or articular head is a flattened curve on the lower surface. The lower condyles are expanded in typical Galliralline fashion. The differences between the limb bones of Gallirallus and other rails are subtle, and although apparent to the eye, are difficult to describe in words. The *tibio-tarsus* is straight shafted. The cnemial process or cnemial crest is well produced above, and almost square in shape,

as in the living wekas. The roughening for muscular attachment, where the crest is attached to the shaft, is pronounced. On the two specimens available, that of the Holotype and the broken AV18,476 the upper process for attachment of the fibula is 1.4 cm. in length, about the same proportion of the total length of the bone as in modern wekas.

The *tarso-metatarsus* also compares well with the living *Gallirallus* in shape, but is much harder to distinguish from other small rails, such as *Capellirallus hodgeni*, of approximately the same size, and with isolated bones, it would be difficult to decide which genus one was handling. On the Holotype tarso-metatarsus of *Gallirallus hartreei* the protuberance on the upper inner side of the shaft is very slightly less than in *Capellirallus hodgeni*, but in both these genera is proportionately more distinct than in most *Gallirallus australis*. Considering the range of variation in such features usually discernible in a series from any one species, and that only one tarso-metatarsus of the new species is available, one hesitates to use this as a diagnostic feature.

Otherwise, the bone is again a miniature representative of the corresponding one in the living wekas.

The *humerus* is slightly more slender and a little more curved in the shaft than in the corresponding bone in many *Gallirallus australis*, although the latter varies somewhat in this respect. The lateral crest is pronounced, curving slightly inward. Although the humerus of *Capellirallus hodgeni* is similar to *Gallirallus hartreei* in size and shape, this crest extends further down the shaft in the former, and differs in shape. In *Gallirallus hodgeni* it is very close to *Gallirallus australis*, but slightly more pronounced in proportion, and although distally it is hard to distinguish between *C. hodgeni* and *G. hartreei*, the small distal tubercle on the outer side of the shaft is less pronounced in the new species, just as it is in *Gallirallus australis*.

Measurements of the corresponding bones of living subspecies of *Gallirallus australis* and extinct *Gallirallus minor* are appended for comparison. So far as I am aware, no such list has so far been published, except one table in Hamilton (op. cit).

All measurements are in centimetres; maximum and minimum measurements are given in each case, taken over a wide range of specimens.

Gallirallus australis greyi (Buller)

	L.	P.		M.	D.
Femur					
AV22,575	7.7	1.6		0.65	1.6
AV22,576	6.5	1.3		0.525	1.325
			Cnemial		
Tibio-tarsus			crest		
AV18,326	12.2	1.7	2.2	0.6	1.2
AV22,575	11.2	1.625	2.075	0.6	1.15
AV22,576	9.6	1.375	1.725	0.5	1.1
Tarso-metatarsus					
AV22,575	6.8	1.225		0.575	1.35
AV22,576	5.9	1.075		0.5	1.15
Humerus					
AV18,817	5.7	1.275		0.4	0.95
AV22,575	5.5	1.225		0.4	0.9
AV22,576	4.9	1.05		0.35	0.8

AV22,575 and 22,576 are recent skeletons, sex unknown, from the Gisborne district. AV22,576 is the smallest recent weka I have seen, being close to the upper range of *Gallirallus minor,* except in the tarso-metatarsus. AV18,326 is subfossil from " Hukanui No. 3," a Hawke's Bay Cave. AV18,817 from a sub-fossil part individual skeleton from " Cut-throat " cave, Te Kuiti district.

Gallirallus australis australis (Sparrman)

	L.	P.		M.	D.
Femur					
AV5,629	7.825	1.6		0.675	1.65
AV22,413	7.325	1.45		0.625	1.425
			Cnemial		
Tibio-tarsus			crest		
AV5,629	11.3	1.7	2.25	0.65	1.2
AV22,413	10.4	1.525	2.0	0.55	1.125
AV16,710	10.125	1.3	–	0.5	0.9
Tarso-metatarsus					
AV5,629	6.825	1.3		0.6	1.4
AV22,413	6.225	1.2		0.525	1.225
Humerus					
AV16,709	5.9	1.3		0.425	0.9
AV5,629	5.5	1.3		0.410	0.975
AV22,413	5.325	1.175		0.410	0.9
AV16,694	5.2	1.15		0.425	0.85

AV5,629 is a skeleton collected in 1899 at Motunau, North Canterbury, and merely labelled " weka." It is possibly *G. a. hectori.* AV22,413 is a recent skeleton from the Nelson district, AV16,709, 16,710 from " Pothole 3," Canaan, Takaka; AV16,694 from " Kiwi Hole," Takaka, are part individual skeletons, subfossil.

Gallirallus australis hectori (Hutton)

In the author's opinion " hectori " is merely a colour variant of *G. a. australis,* as the *weka-pango,* the blackish form from Fiordland is recognised to be.

	L.	P.		M.	D.
Femur					
AV12,770	7.95	1.65		0.625	1.6
AV5,187	7.725	1.575		0.7	1.55
			Cnemial		
Tibio-tarsus			crest		
AV12,770	11.5	1.8	2.225	0.65	1.2
AV5,187	10.9	1.65	2.1	0.625	1.1
Tarso-metatarsus					
AV12,770	6.610	1.3		0.6	1.4
AV5,187	6.325	1.2		0.6	1.3
Humerus					
AV12,770	5.7	1.2		0.4	1.0
AV5,187	5.5	1.2		0.410	1.0

AV12,770 is a skeleton from the Chatham Islands, AV15,187, a female, is from a South Island, probably Canterbury, locality, collected many years ago.

Gallirallus australis scotti (Ogilvie - Grant)

	L.	P.	Cnemial crest	M.	D.
Femur					
AV13,457	7.7	1.5		0.6	1.525
AV13,490	7.6	1.5		0.65	1.6
Tibio-tarsus					
AV13,457	10.6	1.6	2.0	0.575	1.1
AV13,482	9.9	1.3	–	0.4	0.975
Tarso-metatarsus					
AV13,457	6.225	1.15		0.55	1.275
AV13,471	6.0	1.1		0.525	0.975
Humerus					
AV21,485	5.5	1.3		0.4	0.9
AV13,457	5.5	1.2		0.4	0.875
AV22,793	4.95	1.0		0.4	0.775

AV13,475 is a recent part skeleton from sand-dunes on Native Island, Stewart Island. The others are odd midden bones from Old Neck and Native Island.

Gallirallus australis all subspecies

Maximum and minimum lengths:

Femur: AV12,770, 7.95; AV12,576, 6.5.
Tibio-tarsus: AV18,326, 12.2; AV12,576, 9.6.
Tarso-metatarsus: AV5,629, 6.825; AV22,576, 5.9.
Humerus: AV16,709, 5.9; AV22,576, 4.9.

Gallirallus minor (Hamilton)

Hamilton's Type bones were from a cave at Castle Rock, Southland. He gave the following length measurements, in centimetres. Femur: 6.4, tibio-tarsus: 9.3, tarso-metatarsus: 5.3.

This small weka, unfortunately extinct, was formerly widespread in both North and South Islands, and occurred also on Stewart Island.

It was a more slenderly built, gracile bird than the living woodhens, and its bones are usually discernible at first glance in a mixed group of subfossil bones.

	L.	P.	Cnemial crest	M.	D.
Femur					
AV21,335D	6.7	1.3		0.525	1.275
AV19,112	6.65	1.3		0.575	1.310
AV17,412	6.325	1.2		0.55	1.25
AV21,335A	6.225	1.3		0.575	1.3
Tibio-tarsus					
AV21,335J	9.625	1.310	–	0.575	0.95
AV19,912	9.325	1.325	1.85	0.5	1.0
AV17,412	9.0±	1.2	–	0.5	0.95
Tarso-metatarsus					
AV19,112	5.55	0.95		0.5	1.0
AV17,412	5.4	1.05		0.475	1.125
AV21,335N	5.25	1.0		0.45	1.0
Humerus					
AV19,112	4.8	1.15		0.375	0.8
AV17,412	4.6	1.025		0.325	0.75

AV19,112 is an almost complete skeleton from a limestone cave, Puketiti Station, 7 miles west of Pio-Pio, Waitomo County, AV17,412, almost complete skeleton from Prouses Cave, north of Paturau River, West Nelson. AV21,335 are mixed bones from a limestone cave near Canaan Road, Nelson. The only recent skeleton I have seen that in any way approaches *G. minor* is AV22,577.

LITERATURE CITED

HAMILTON, A., 1893: On the Fissures and Caves at the Castle Rocks, Southland . . . . Ocydromus: **Trans. N.Z. Inst.** Vol. 25, pp. 103-105.
OLIVER, W. R. B., 1955: **New Zealand Birds** 2nd ed. A. H. and A. W. Reed, Wellington, pp. 594-596.
SCARLETT, R. J., 1955: A New Rail from South Island Swamps in New Zealand. **Rec. Cant. Mus.** Vol. 6, No. 4, pp. 265-266.

★

SHORT NOTES

THE "PORIRUA YELLOWLEGS" AGAIN

On November 11th, 1962, Dr. C. A. Fleming discovered a strange wader in the vicinity of Porirua, which was subsequently seen and repeatedly observed by numerous New Zealand and Australian ornithologists. On the basis of available evidence at the time, Fleming (1963) identified the bird as a Greater Yellowlegs *Tringa melanoleuca,* and published his findings, together with photographs by I. G. Andrew, in "Notornis."

The evidence presented in Fleming's paper was commented on by Dr. R. A. Falla (1964), who suggested that the bird concerned could just as well have been a Lesser Yellowlegs *Tringa flavipes.* Since then much discussion as to the identity of the above bird has taken place within New Zealand ornithological circles. Additional sightings of Yellowlegs in New Zealand were reported during the same year (Mackenzie, 1964, and Tunnicliffe, 1964).

An eminent North American ornithologist, Dr. R. W. Storer, Professor of Zoology at the University of Michigan and Curator of the university's Museum of Zoology, visited New Zealand recently to study the New Zealand Dabchick *Podiceps rufopectus,* as part of his comprehensive study of the grebes of the world. During his visit to Wellington, the writer had the opportunity to discuss with him *inter alia* the question of sight identification of the two species of Yellowlegs in the field. Dr. Storer pointed out that the best way to distinguish one Yellowlegs from the other in the field on sight alone (i.e. not including call notes), is by comparing the length of their bills with the length of their legs (feet). The length of bill of the Greater Yellowlegs is about as long as the bird's tarsometatarsus (tarsus) whereas the length of bill of the Lesser Yellowlegs is only as long as the exposed part of its tibiotarsus (tibia). This statement was checked on specimens in the Dominion Museum collections and was found to be correct.

This simple and straightforward method of identification was then applied to check the identification of the disputed Porirua bird, and for that purpose I. G. Andrew's photograph (Notornis 10: 279, plate XXVa) was used. The comparison of length of bill with the length of the bird's exposed tibia (and with the length of tarsus), all clearly discernible on this photograph, may indicate that the bird in question was a Lesser Yellowlegs *Tringa flavipes* (Gmelin, 1789).

REFERENCES

FALLA, R. A., 1964: Notornis 11: 104-106.
FLEMING, C. A., 1963: Notornis 10: 258-262, 279, 280.
MACKENZIE, N., 1964: Notornis 11: 100-103.
TUNNICLIFFE, G. A., 1964: Notornis 11: 103-104.

— F. C. KINSKY