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The Genus *Araucaricola* in Fiji  
(Coleoptera, Tenebrionidae)

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INTRODUCTION

The genus *Araucaricola* was erected by Lea (Roy. Soc. South Australia, Trans. 53: 218, 1929) for a new tenebrionid, *A. ebenina*, which he found beneath the rotting bark of Norfolk Island pine (*Araucaria excelsa*) on Norfolk Island. The genus remained monotypic until I collected four species from three islands in southeastern Polynesia, during the course of the Mangarevan Expedition in 1934, which were described by Blair (B. P. Bishop Mus., Occ. Papers 15(23): 239-242, 1940). In this paper Blair reviews the relationships of the genus and gives additional descriptive notes on the generic characters. Z. Ono, of the Bishop Museum Micronesian Expedition of 1936, collected a single example of another species, in the Palau Islands, which Blair described (B. P. Bishop Mus., Occ. Papers 16(6): 143, 1940).

Mr. R. A. Lever, Fijian Government Entomologist, recently sent me some miscellaneous insects for naming, among them a new species of *Araucaricola*. Mr. Lever's request for a name for the species has resulted in this report. I have also included two Fijian *Araucaricola* which were collected by the Henry G. Lapham Expedition to Fiji (1938).

The species thus far studied live in dead wood. They are often found in large colonies. I took 66 specimens from a rotting stump on Rapa Island and 81 specimens from a dead stem of *Piper* on Raivavae Island. Other series were taken from dead *Cyathea* fronds. The genotype was found by Lea to be abundant beneath rotting *Araucaria* bark. Lever sent in a series of the new species *A. parallela* taken from decaying *Ptychosperma* (?) palm. In view of the colonial habits of the

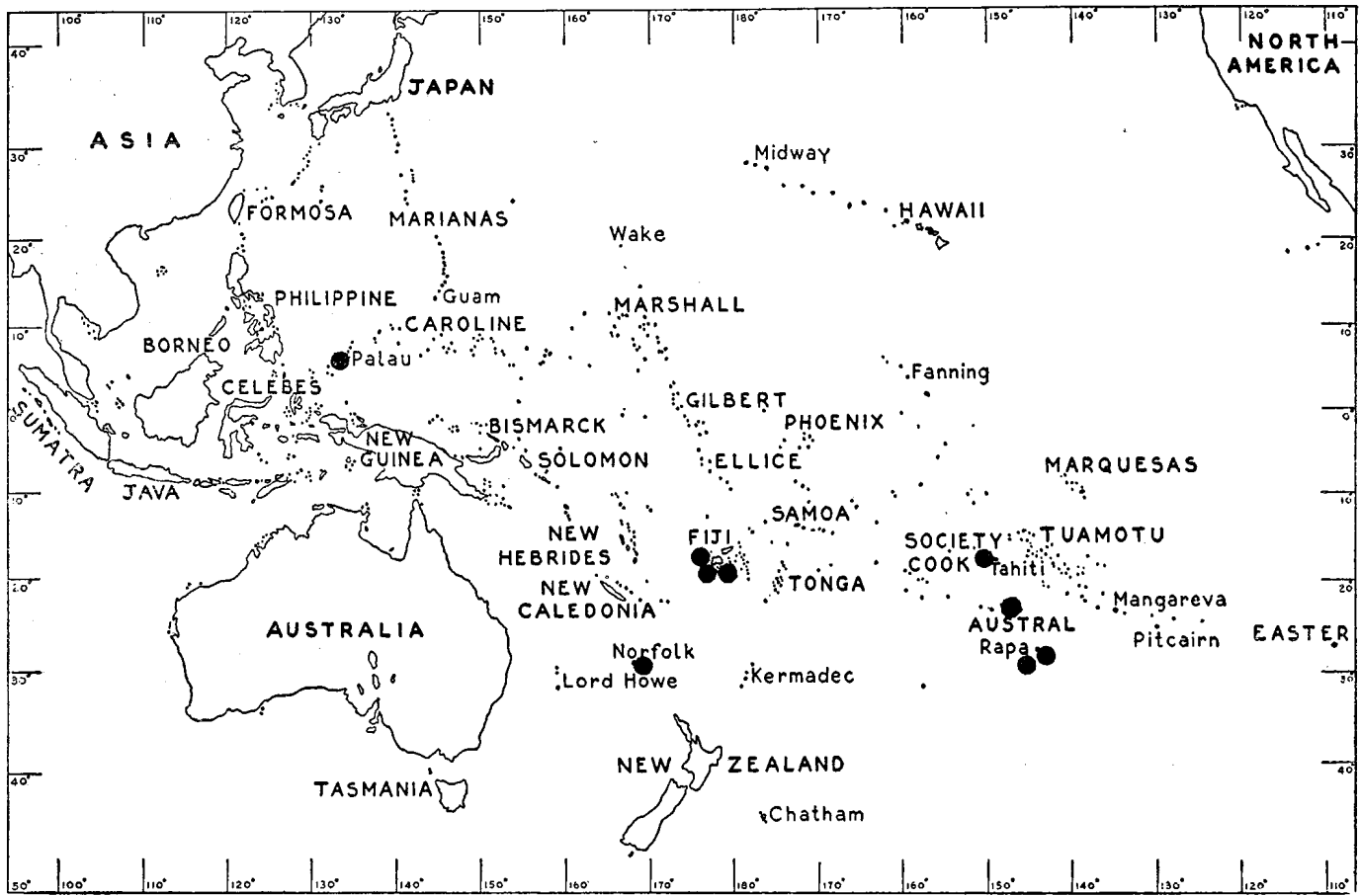


FIGURE 1.—Distribution of the species of *Araucaricola*.

species, it appears unusual to me that my colleague and I took only single specimens of the two new high mountain forms which we collected in Fiji in 1938, although several hundred Tenebrionidae were collected.

The four species described by Blair from southeastern Polynesia are said to be apterous; the other species, including those described here, are all apparently equipped with well-developed wings.

The holotypes of the new species described herein are in Bishop Museum.

#### LIST OF THE SPECIES OF ARAUCARICOLA

1. *Araucaricola ebenina* Lea, Roy. Soc. South Australia, Trans. 53: 218, 1929.  
Genotype.  
Norfolk Island.
2. *Araucaricola carolinensis* Blair, B. P. Bishop Mus., Occ. Papers 16(6): 143, 1940.  
Palau Islands.
3. *Araucaricola parallela*, new species.  
Fiji, Viti Levu.
4. *Araucaricola compacta*, new species.  
Fiji, Viti Levu.
5. *Araucaricola simulans*, new species.  
Fiji, Viti Levu.
6. *Araucaricola tahitiensis* Blair, B. P. Bishop Mus., Occ. Papers 15(23): 241, fig. 2, *b*, 1940.  
Society Islands, Tahiti.
7. *Araucaricola australensis* Blair, B. P. Bishop Mus., Occ. Paper 15(23): 241, fig. 2, *a*, 1940.  
Austral Islands, Raivavae.
8. *Araucaricola rapaensis* Blair, B. P. Bishop Mus., Occ. Papers 15(23): 240, fig. 1, *a*, 1940.  
Rapa Island.
9. *Araucaricola zimmermani* Blair, B. P. Bishop Mus., Occ. Papers 15(23): 241, fig. 1 *b*, 1940.  
Rapa Island.

#### KEY TO THE SPECIES OF FIJIAN ARAUCARICOLA

1. Length about 4 mm.; lateral explanate margins of the elytra not conspicuously narrower behind the middle than at the base, not in part concealed from above by the elytra.....**A. parallela** Zimmerman.  
Length 3 to 3.5 mm.; lateral explanate margins of the elytra obviously narrower behind the middle than at the base and there either partially or entirely concealed from above by the tumid elytra..... 2.
2. Pronotum broadest at about the middle, the puncturation dense, moderately coarse, the derm coarsely reticulate.....**A. compacta** Zimmerman.  
Pronotum broadest at or near the basal angles, the punctures minute, microsculpture of the derm inconspicuous.....**A. simulans** Zimmerman.

***Araucaricola parallela***, new species (fig. 2, *a-c, f-h, j*).

Male. Derm shiny, black, slightly diluted with red, antennae reddish brown, legs brown; dorsal vestiture consisting of inconspicuous microscopical setae.

*Head* almost evenly convex longitudinally and transversely, anterior margins strongly elevated into a well-developed, thick, rounded ridge from eye to eye; an eye, measured from above, about as long as antennal segments two plus three; densely and finely punctate, most punctures separated from one another by about the diameter of a puncture; antennae capable of reaching back to basal third of pronotum, segment 2 as long as 3, 3 as long as 4 plus one fourth of 5, 4 and 5 subequal in size and shape, 5 to 8 slightly broader, 8 about as broad as long, 9, excluding its basal stalk, slightly transverse, 10 slightly shorter than 9, 11, excluding its basal stalk, as long as 10 plus one half of 9, asymmetrically ovoid, dorsal edge more oblique in distal two thirds than ventral edge. *Pronotum* one third broader than long (median length divided into breadth equals 1.38 to 1.40), broadest at the middle, the distance between the hind angles 54 units, that between the anterior angles 42 units in holotype, arcuate side margins converging slightly more strongly toward apex than base, anterior lateral corners forming angles of 90 degrees or more, but, because of arcuation of sides, sometimes appearing acute; anterior margin almost straight inside lateral angulations, margined only near sides; sides with strongly developed margins, widest near hind angles; posterior corners almost rectangular, slightly more than 90 degrees, posterior edge bisinuate, distinctly margined throughout its breadth; dorsum convex; densely, finely, shallowly punctate, punctures separated by as much or more than diameter of a puncture. *Scutellum* about twice as broad as long, its hind margin semicircular. *Elytra* almost parallel-sided to beyond middle, thence arcuately narrowed to the apices, three fifths as broad as long, two and one half times to about two and three fourths times as long as prothorax, lateral edge broadly margined, margin completely visible from above, lateral outline discontinuous with that of pronotum, epipleurae as broad at their broadest points near bases as distance between a fore coxal cavity and anterior margin of prosternum; dorsal puncturation dense, moderately coarse, each puncture several times larger than those of pronotum and each closer to its neighbor than diameter of a puncture. *Wings* fully developed for flight. *Legs* with femora stout and clavate, fore pair with a small patch of short, dense, golden hair at middle of lower side in male, fore and mid femora almost straight along lower side, but hind pair arched; fore and mid tibiae straight and evenly expanded from base to apex and shorter than femora, hind pair strongly sinuous, and as long as a hind femora; tarsi with long hairs beneath, penultimate segment oblique, not lobed nor produced, terminal segment longer than other segments together. *Sternum* with prosternum densely, moderately coarsely punctured, each puncture bearing a short, fine seta; narrowest part of intercoxal process of prosternum slightly more than one half as broad as a fore coxa, concave behind coxae and projecting caudad as illustrated; mesocoxae separated by almost one half breadth of a coxa; metasternum with punctures fine in middle and coarse at sides and bearing setae similar to those on prosternum, intercoxal process distinctly margined, distance between mid and hind coxae nearly as great as breadth of a metacoxa, hind coxae about as widely separated as length of a coxa across trochanter. *Venter* with punctures setiferous, minute in middle, larger toward sides but nowhere very coarse or conspicuous; anterior edge of first ventrite sharply margined, that segment as long as 2 plus one half of 3, 2 as long as 3 plus one half of 4, 3 as long as 4 plus one half of 5, its hind margin rounded off dorso-ventrally as in that of 4, segments 3, 4 and 5 on different levels and thus appearing as steps when viewed

from side; 4 about seven tenths as long as 5; 5 angulately arcuate. Length, holotype male, including head, 4 mm.; breadth, about 1.7 mm.

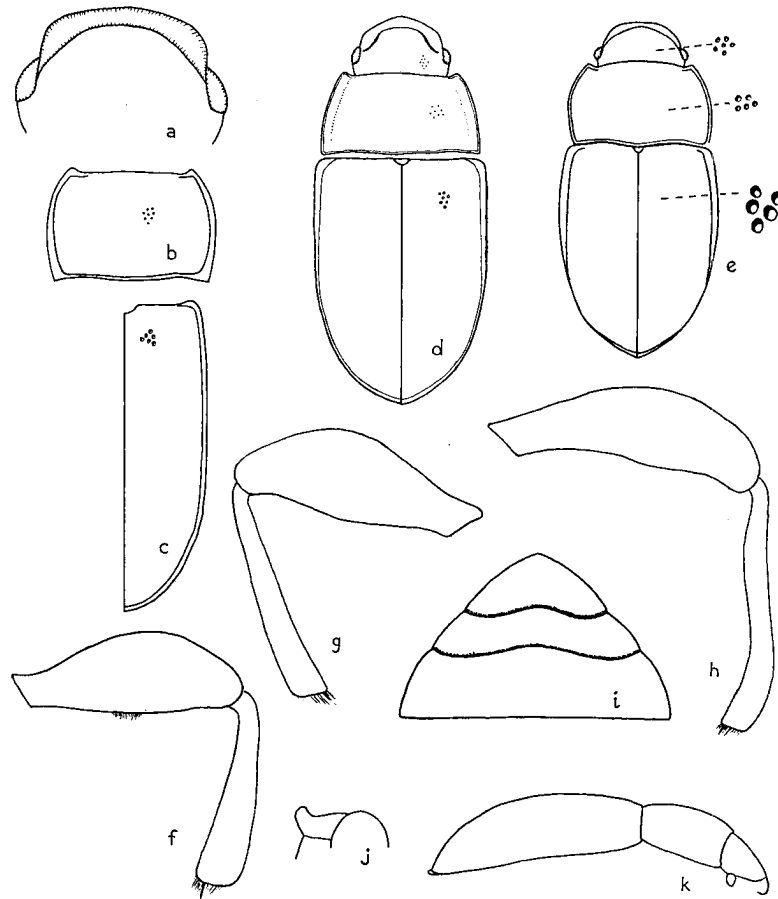


FIGURE 2.—Features of new species of Fijian *Araucaricola*: a, b, c, outlines of head (a), pronotum (b), and right elytron (c) of *A. parallela*; d, *A. simulans*; e, *A. compacta* (the diagrams of the punctures are drawn to the same scale relative to one another, but not to the scale of the entire insect); f, fore leg of a male of *A. parallela*; g, hind leg of a female of *A. parallela*; h, hind leg of a male of *A. parallela*; i, three terminal ventrites of *A. compacta*; j, diagram of the intercoxal process of the prosternum of a male of *A. parallela* as seen from the left side with the insect on its back; k, dorsal outline of *A. compacta*.

Holotype male, allotype female, two male paratypes, and one dismembered male paratype. These specimens bear the following label "R. A. Lever, Fiji, C 1071, Serca, IX-40." Mr. Lever has kindly

supplied more complete and accurate data as follows: the specimens were collected at Nambukelevu, altitude 800 feet, Serua Province, Viti Levu, Fiji by G. Setten from the rotten wood of what was believed to be *Ptychosperma*. (This palm now goes under the name of *Balaka*, I believe.) All of the specimens were received damaged by poor mounting.

This species is quite distinct from any of the other described species. The holotypes of all of the species of the genus are in Bishop Museum except that of the genotype. This species most closely resembles *Araucaricola carolinensis* Blair in the shape of the body. The new species differs from *A. carolinensis* in numerous details, however. The more obvious differences are as follows: the new species is broader, the anterior margin of the head is much more strongly developed and the puncturation of the lower surfaces is coarser and more extensive. Blair did not designate the sex of the holotype of *A. carolinensis*; it is a female. *A. parallela* does not appear to be closely allied to the two high mountain forms described below.

***Araucaricola compacta*, new species (fig. 2, e, i, k).**

Female. Derm black, somewhat diluted with red, antennae and legs brown or reddish brown; dorsal vestiture consisting of small, fine setae, those on elytra tending to be serially arranged on disk.

*Head* convex transversely and longitudinally; anterior margin strongly elevated throughout; an eye, measured from above almost as long as antennal segment 2 plus one half of 3; punctures moderately coarse, dense, most punctures closer to their neighbors than the diameter of a puncture; antennae capable of being bent backward to within length of distal segment to hind angles of prothorax, segment 2 as long as 3, 3 as long as 4 plus one half of 5, 4 to 8 subequal in length, 4 longer than broad, 8 as broad as long, 9 and 10 transverse, 11 as long as 10 plus about one half of 9, outer edge oblique in distal half. *Pronotum* broadest across middle and there about one third broader than long (median length divided into breadth equals 1.41), distance between hind angles 47 units, that between anterior angles 36 units, lateral margins almost evenly arcuate, fore and hind angles slightly greater than 90 degrees; sides comparatively not broadly explanate, but sharply margined throughout, margin extending along fore edge to only about half way to middle but extending entirely across posterior edge; dorsum rather strongly convex dorsally and laterally, longitudinal contour conspicuously discontinuous with that of elytra; comparatively coarsely sculptured, punctures medium sized, separated by less than diameters of punctures, derm coarsely reticulate; anterior margin slightly convex, posterior margin bisinuate. *Scutellum* less than twice as broad as long, hind margin semi-circular. *Elytra* almost three fourths as broad as long (2.8:4.0), two and one half times as long as pronotum, shaped as illustrated, lateral outlines abruptly discontinuous with those of pronotum, longitudinal dorsal contour evenly arcuate; lateral edges strongly margined, most strongly explanate toward the base; each elytron so tumid between middle and caudal third that lateral margin is con-

cealed or at most narrowly exposed when viewed from directly above; punctures dense, comparatively coarse, separated from one another by less than the diameter of a puncture, coarsest in the basal half, those near suture tending to be arranged in regular rows. *Wings* probably functional. *Legs* with clavate femora all rather similar, none unusually modified, fore pair with an inconspicuous patch of dense, minute setae on lower side, at about middle; tibiae all similar, gradually expanded from base to apex; tarsi with penultimate segment dorso-ventrally oblique distad, not bilobed nor emarginate but completely rounded at apex, the long hairs it bears more than twice as long as segment, distal segment as long or longer than other segments combined. *Sternum* with prosternum coarsely and densely punctured, punctures setiferous, some of those along median line bearing long hairs; narrowest part of intercoxal process one half as broad as a fore coxa, margined at sides, posterior median part projecting behind hind margin of prosternum, concave behind coxae, as seen from side, but not turned downward; mesosternum with intercoxal process impressed along median line, the coxae separated between one fourth and one third the breadth of a mesocoxa; metasternum coarsely and densely punctate, punctures largest laterally, setae rather long, intercoxal process margined, hind coxae separated by a distance equal to length of a metacoxa across articulation of trochanter; metasternal episternum with punctures mostly arranged in a single row. *Venter* densely, moderately coarsely punctate; ventrite 1 as long along median line as 2 plus about two thirds the length of 3, narrowest part behind a coxa slightly shorter than 2; 2 as long along middle as 3 plus about one half of 4; segment 3 slightly longer than 4; segments 3 and 4 with their hind margins strongly sinuous and their hind edges steep and accentuating steplike appearance of last three segments. Length, including head, 3.0 mm.; breadth, 2.4 mm.

Holotype female, beaten by me from shrubbery at Nandarivatu, Viti Levu, altitude 3,000 feet, September 3, 1938.

This species is apparently allied to *A. simulans* and can be distinguished from that species by the characters mentioned under the description of *A. simulans*.

***Araucaricola simulans*, new species (fig. 2, d).**

Female. Derm black to piceous, appendages yellowish brown to reddish brown, dorsum shiny; dorsal vestiture consisting of minute setae.

*Head* just perceptibly flattened behind anterior ridge, otherwise convex transversely and longitudinally; anterior margin elevated into a strongly developed, entire ridge; an eye, measured from above, as long as a second antennal segment plus about one fifth of a third segment; punctures minute, separated from one another by more than diameters of punctures; antennae capable of being bent backward to hind margin of pronotum, segments 2 and 3 equal in length, 4 to 8 successively slightly shorter and broader, 9 and 10 rather similar in size and shape, slightly transverse, 10 about as broad as long, outer side oblique. *Pronotum* broadest at or near the hind angles, about three fifths as long as broad (median length divided into breadth equals 1.70), the distance between hind angles 53 units, that between anterior angles 37 units, lateral margins more rapidly converging in front of than behind middle, hind angles almost 90 degrees, fore angles more obtuse; sides broadly explanate, especially behind, margin continuous along hind edge, but continuing only a short way along the outer sides of the front edge; dorsum evenly

arcuate transversely and longitudinally, only slightly discontinuous in dorsal outline with that of head but distinctly discontinuous with that of elytra; minutely and shallowly punctate, most of the punctures separated from one another by as much or more than the diameter of a puncture, microsculpture of derm fine; anterior margin almost straight between inner sides of angles, the hind margin shallowly sinuous. *Scutellum* less than twice as long as broad, the hind margin semicircular. *Elytra* one third longer than broad, about two and eight tenths as long as the pronotum; almost straight on sides from behind humeri to behind middle and thence roundly narrowed to apex; explanate side margins narrowed behind middle, but not concealed from above; lateral outlines abruptly discontinuous with those of the pronotum; longitudinal dorsal contour more strongly arcuate behind middle; each elytron slightly impressed toward suture on declivity; punctures dense, shallow, rather small, minute caudad, their setae flecklike, tending to be serially arranged near suture. *Wings* developed. *Legs* with clavate femora all rather similar, fore pair with a small, inconspicuous patch of minute setae at about middle of lower side; tibiae all rather similar, gradually expanded from base to apex; tarsi with penultimate segment dorso-ventrally oblique distad, rounded at apex, long hairs it bears more than twice as long as segment, distal segment as long or longer than the other segments together. *Sternum* with prosternum densely punctured, the punctures deep, moderately large, a few of those in front of intercoxal process bearing some long hairs; intercoxal process margined at sides, longitudinally convex, apex not turned ventrad, but transversely margined at apex, its narrowest part one half as broad as a fore coxa; mesosternum with intercoxal process shallowly impressed, narrowest part between one fourth and one third as broad as a mesocoxa; metasternum with punctures coarsest and closest toward sides and there rather closely set with medium-sized punctures, anterior edge margined, hind coxae separated by length of longitudinal chord of a coxa across articulation of a trochanter; metepisternum with punctures in a single line. *Venter* minutely, inconspicuously punctate; ventrite 1 as long along median line as 2 plus about one half of 3, the narrowest part behind a coxa about three fourths as long as 2, intercoxal process margined; ventrite 2 slightly longer than 3, 3 as long as 4 plus one half of 5, 4 about three fourths as long as 5; segments 3 and 4 with their steplike hind margins convex across middle and with sides turned slightly caudad. Length, including head, 3.5 mm.; breadth, 1.5 mm.

Holotype female collected by Y. Kondo from beneath the decaying bark of a log four miles south of Nandarivatu, Viti Levu, altitude 2,400 feet, September 9, 1938.

This species closely resembles *A. compacta*. It may, however, be distinguished from *A. compacta* principally because it is less densely and coarsely punctate; because the pronotum is broadest at the base instead of at the middle; because the elytra are differently shaped, longer in proportion to the pronotum, and less tumid above the lateral margins behind the middle; and because the intercoxal process of the prosternum is longitudinally convex instead of in part concave.