

Another new member of the *Varanus (Euprepiosaurus) indicus* group (Sauria, Varanidae): an undescribed species from Rennell Island, Solomon Islands

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Abstract

A new species of big-growing monitor lizard is described from Rennell Island, Solomon Islands. It is a member of the *Varanus indicus* group within the subgenus *Euprepiosaurus* FITZINGER and is distinguished from all other representatives of this group by the combination of several scalation characters, colour pattern, and hemipenial characters. Above all, the new species is characterized by a weakly compressed tail being roundish in its proximal third where it lacks a double-crested median keel.

Key words: Sauria: Varanidae: *Varanus (Euprepiosaurus) indicus* group; new species; Solomon Islands: Rennell Island.

Zusammenfassung

Ein weiteres neues Mitglied der *Varanus (Euprepiosaurus) indicus*-Gruppe (Sauria: Varanidae): Eine unbeschriebene Art von der Insel Rennell, Salomonen.

Wir beschreiben eine neue, großwüchsige Waranart von der zu den Salomonen gehörenden, weit abseits im südöstlichen Pazifik liegenden Rennell-Insel, deren Belegexemplare aus dem Zoologischen Museum der Universität Kopenhagen bereits 1962 während der Noona-Dan-Schiffs-Expedition gesammelt worden waren. Die neue Art gehört - innerhalb der Untergattung *Euprepiosaurus* FITZINGER - zur *Varanus indicus*-Gruppe und unterscheidet sich von allen neun bisher bekannten Arten dieser Gruppe (*V. caerulivirens*, *V. cerambonensis*, *V. doreanus*, *V. finschi*, *V. indicus*, *V. jobiensis*, *V. melinus*, *V. spinulosus* und *V. yuwonoi*) durch die Kombination folgender Merkmale: Fehlende Blaufärbung; Schwanz ungebändert; kein Schläfenband; helle, ungezeichnete Kehlgrenze; retikulierte bis ozellierte Bauchzeichnung beim Jungtier; helle, nur im Vorderbereich undeutlich pigmentierte Zunge; Hemipenis mit nur an einer Seite ausgebildeten, sich zum äußeren der beiden apikalen Loben erstreckenden Paryphasmata. Von allen neun Arten der *V. indicus*-Gruppe unterscheidet sich die neue Art durch den im ersten Drittel drehrunden Schwanz, dem die für alle Großwarane charakteristische mediane, dorsale Doppelkielreihe fehlt. Trotz des im Vergleich zu den nächsten Verwandten weniger lateral komprimierten Schwanzes scheint die Lebensweise stärker aquatisch geprägt zu sein als bei jenen.

Schlagwörter: Sauria: Varanidae: *Varanus (Euprepiosaurus) indicus*-Gruppe; neue Art; Salomonen: Insel Rennell.

1 Introduction

Since December 1997, four new big-growing species of monitor lizards belonging to the *Varanus indicus* species group and originating from various Moluccan Islands (Indonesia) have been identified: *V. melinus* BÖHME & ZIEGLER, 1997, *V. yuwonoi* HARVEY & BARKER, 1998, *V. caerulivirens* ZIEGLER, BÖHME & PHILIPP, 1999, and *V. cerambonensis* PHILIPP, BÖHME & ZIEGLER, 1999. This remarkable series of discoveries did not end with the end of the last century: In this paper we report on the recent discovery of a fifth species of this group which was found by the senior author during his last visit at the Zoological Museum of the University of Copenhagen (ZMUC). Among the holdings of this museum were five specimens of Pacific monitor lizards, id est of the *V. indicus* group, which had been collected by the "Noona Dan Expedition" on Rennell Island, Solomon Islands, in 1962 (see WOLFF 1968). Of these, three subadults from Lavanggu had been catalogued (as *V. indicus*) under ZMUC

R4223-25, while two further specimens, a juvenile and a huge, adult male, were equipped with field tags (E 617 and E 605 respectively).

McCoy (1980) listed *Varanus indicus* (sensu lato) for 15 islands of the Solomon archipelago: Bougainville, Shortlands, Rendova, Isabel, Russell, Guadalcanal, Nggela, Savo, Malaita, Rennell, San Cristobal, Ugi, Olu Malau, Kolombangara and Gizo. He characterized the species as having the tail "strongly compressed laterally with a distinct caudal keel". However, the first look on the five ZMUC specimens from Rennell Island demonstrated already that they do not at all fit this characterization. They rather have low, weakly compressed tails, which are nearly roundish in cross section in their first third.

The example of the Pacific monitors of the *Varanus indicus* group inhabiting the Moluccan Islands had shown that several sibling species were involved and partly even coexisted on various islands, so that a redefinition of the original species name *V. indicus* (DAUDIN, 1802) was necessary. As no type was extant, designation of a neotype was warranted which was done by PHILIPP et al. (1999). This reidentification of *Tupinambis indicus* DAUDIN, 1802 was the prerequisite to unambiguously recognise and define also the new Solomon Island taxon described below.

2 Material and methods

The five specimens from Rennell Island are deposited in the Zoological Museum, University of Copenhagen (ZMUC), Denmark, and in the Zoologisches Forschungsinstitut und Museum A. Koenig (ZFMK), Bonn, Germany. This series is compared with data sets of the numerous specimens used in our former studies of this monitor lizard species group (BÖHME et al. 1994, BÖHME & ZIEGLER 1997, PHILIPP et al. 1999, ZIEGLER & BÖHME 1999, ZIEGLER, BÖHME & PHILIPP 1999, ZIEGLER, PHILIPP & BÖHME 1999), and scale counts, measurements and proportion indices were taken accordingly: P - scales from rictus to rictus; Q - scales around tail base; S - scales around midbody; T - transverse ventral scale rows from gular fold to insertion of hindlegs; X - transverse dorsal scale rows from hind margin of tympanum to gular fold; XY - X + transverse dorsal scale rows from gular fold to insertion of hindlegs; m - scales around neck anterior to gular fold; n - gulars from tip of snout to gular fold. SVL - snout-vent length (D+E); D - head-neck length (from tip of snout to gular fold), E - body length (from gular fold to cloaca); F - tail length (from cloaca to tail tip); TL - total length; A - head-length (from tip of snout to anterior margin of ear), B - head width (maximum width between eyes and ears); C - head height (above the eyes); G - distance from anterior margin of eye to posterior edge of nostril; H - distance from anterior edge of nostril to tip of snout; F/SVL (relative tail length); G/H (position of nostril between tip of snout and eye); A/B (relative head length to head width); A/C (relative head length to head height).

The degree of lateral tail compression was evaluated using x-ray photography.

One invertedly fixed hemipenis of the adult male ZMUC R E 605 was removed from the tail base and carefully everted according to the procedure described by ZIEGLER & BÖHME (1997).

3 Results

Scale counts, measurements and proportion indices of the five Rennell Island specimens are summarized in Tab. 1. The correlation of the S and XY values shown in the diagram (Fig. 1) clearly sets the Rennell population apart from the compared *V. indicus* samples, above the upper range of the latter. Although there is no indication of

sympatric occurrence of *V. indicus* with the new taxon so far, we think it appropriate to describe it as a full species rather than a subspecies of *V. indicus*, as the main distinctive feature between both concerns an osteological character state.

***Varanus juxtindicus* sp. nov.**

	ZMUC E 605	ZMUC E 617	ZMUC R 4223	ZMUC R 4224	ZFMK 72865	M ± S
Scale counts						
P	39.0	42.0	41.0	40.0	43.0	41.0 ± 1.41
Q	72.0	87.0	72.0	76.0	83.0	78.0 ± 6.03
S	128.0	140.0	135.0	136.0	137.0	135.2 ± 3.97
T	104.0	105.0	107.0	106.0	111.0	106.6 ± 2.42
X	39.0	43.0	34.0	38.0	37.0	38.2 ± 2.93
XY	141.0	149.0	132.0	142.0	137.0	140.2 ± 5.64
m	102.0	104.0	92.0	95.0	94.0	97.4 ± 4.72
n	88.0	85.0	83.0	96.0	86.0	87.6 ± 4.50
Measurements						
SVL	504.0	144.0	279.0	299.0	265.0	
TL	1324.0	367.0	715.0	754.0	725.0	
A	81.5	28.5	47.2	53.8	48.7	
B	59.4	16.3	26.9	30.5	27.9	
C	38.1	11.6	18.9	21.6	19.4	
D	184.0	57.0	96.0	101.0	97.0	
E	320.0	87.0	183.0	198.0	168.0	
F	820.0	223.0	436.0	455.0	460.0	
G	20.0	7.2	12.0	13.4	11.5	
H	18.5	6.0	10.8	11.9	10.9	
Proportion indices						
F/SVL	1.6	1.6	1.6	1.5	1.7	1.6 ± 0.08
G/H	1.1	1.2	1.1	1.1	1.1	1.1 ± 0.05
A/B	1.4	1.8	1.8	1.8	1.8	1.7 ± 0.15
A/C	2.1	2.5	2.5	2.5	2.5	2.4 ± 0.14

Tab. 1. Individual morphometric and meristic characters (for symbols see the material & methods section) of the type series *Varanus juxtindicus* sp. n.; M ± S = mean ± standard deviation.

Individuelle Schuppen- und Messwerte (Symbole erläutert in Abschnitt Material & Methoden) der Typenserie von *Varanus juxtindicus* sp. n.; M ± S = Mittelwert ± Standardabweichung.

Varanus indicus (not DAUDIN) – McCoy (1980: 52).

Holotype: ZMUC R E 605 (Fig. 2 and 3), adult male, collected in Lake Tegano (= Te-Nggano), near Niupani (11°41'S, 160°22'E), Rennell Island, Solomon Islands, by the Danish Noona Dan Expedition, 1962.

Paratypes: ZMUC R E 617, juvenile, Niupani, 25 m a.s.l., at the coast of Lake Tegano, Noona Dan Expedition, 25.8.1962. ZMUC R 4223-4224 and ZFMK 72865

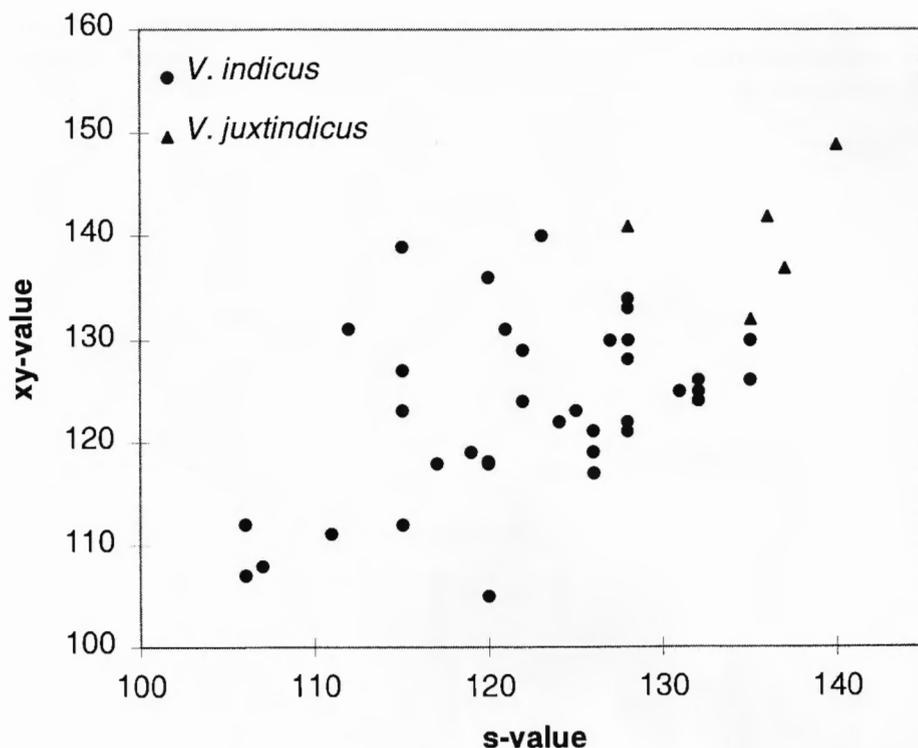


Fig. 1. Correlation of the S (= midbody scales: ordinate) and XY values (= transverse dorsal scale rows from hind margin of tympanum to gular fold plus transverse dorsal scale rows from gular fold to insertion of hindlegs) of *Varanus indicus* (dots) and *V. juxtindicus* sp. n. (triangles).

Korrelation der S- (= Schuppen um die Körpermitte: Ordinate) und XY-Werte (= dorsale Schuppenquerreihen vom Hinterrand des Tympanums bis zur Gularfalte plus dorsale Schuppenquerreihen von der Gularfalte bis zum Hinterbeinansatz) von *Varanus indicus* (Punkte) und *V. juxtindicus* sp. n. (Dreiecke).

(formerly ZMUC R 4225), all half-grown, Lavanggu (11°39'S, 160°14'E), Rennell Island, Solomon Islands, Noona Dan Expedition, 1962.

Diagnosis: A stoutly built member of the *Varanus* (*Euprepiosaurus*) *indicus* species group, which can be distinguished from all other members of this group (*V. caerulivirens*, *V. cerambonensis*, *V. doreanus*, *V. finschi*, *V. indicus*, *V. jobiensis*, *V. melinus*, *V. spinulosus* and *V. yuwonoi*) by its tail shape (which is roundish in its first third and lacks a differentiated double keel on its dorsal ridge) combined with: the lack of blue colouration; an unbanded tail; no temporal band; a light, unpatterned gular region; a reticulate to ocellate ventral pattern of the juvenile; a light tongue with an ill-defined pigmented area only in its anterior part; hemipenis with unilaterally developed paryphasman rows stretching only to the outer apical lobe.

Description of holotype: Habitus stout. Nostril nearer to tip of snout than to eye. Canthal ridge indistinct. Temporal area distinctly swollen, the swellings covering the

entire parietal region of the upper side of head except a short longitudinal concave rim ending anteriorly at the interparietal scale, which has a light center and covers the pineal organ (Fig. 3a). Four distinctly enlarged, broadened supraocular scales on either side, passing into smaller, irregular scales anteriorly. Dorsal neck scales roundish, juxtaposed, leaving series of minute granules – particularly at their hindmargins – visible. Dorsal and lateral scales of similar shape, resembling also those on the upper side of the limbs. Tail with regular annuli of scales from its very beginning. After the 50th ring approximately, some semiannuli are intercalated on the dorsal side of the tail, which finally leads to a regular ratio of two dorsal rows to one ventral row in the distal two thirds of the tail. Tail as broad as high (56 mm) in its proximal third, becoming only slightly compressed posteriorly: at its half the breadth/height ratio is $35/41 (= 0,85)$ mm. An indistinct dorsal double scale crest is visible only in the posterior two thirds of the tail; its first third has rather a longitudinal median concave rim on its dorsal surface instead of an elevated double-keeled crest (Fig. 3b). Gular scales small, roundish, smaller than the polygonal mental and infralabial scales. Chest scales likewise roundish, passing into the squarish ventrals in the posterior two thirds of the venter. Pores (one per scale at its hind margin) are best developed in the lateral parts of the belly; pore-bearing scales being largely lacking along the ventral midline, but present on the lower surface of hindlimbs and tail base. Pores are best developed in the preanal region where there are two large convex scales differentiated, which are bearing more than one pore each.

Colour (in preservative): Ground colour brownish on the upper side of head, body, tail and limbs, with numerous yellow spots. These spots are mostly covering an entire scale (sometimes less, particularly on the upper side of the head) whereas the skin parts around each scale remain dark, which gives the animal a densely spotted appearance (Fig. 3c). Only on the neck some scales are brown without a yellow spot. The upper side of tail has narrow but irregular oblique yellowish stripes, due to the arrangement of the spot-bearing dorsal tail scales. There are no broad oblique bands on the tail, nor is there any trace of blue colouration. Underparts pure yellowish without dark pigmentation, except a few lighter brown spots on the infralabial scales and some dark spotting on the underside of tail.

Tongue yellowish below, with slightly darkened tips, greyish pigmented above from the middle of the tongue body towards the tips, the hindpart being also yellowish with an abrupt, sharp borderline between the two colours (Fig. 3a).

Hemipenis (terminology after ZIEGLER & BÖHME 1997) (Fig. 4): Everted right hemipenis circa 4.0 cm long (left hemipenis not everted), club-shaped, apically strongly and asymmetrically broadened, unpigmented. Sperm groove running obliquely towards the outer of the two apical lobes, where it terminates at the base of the outer hemibaculum. Outer sulcal lip distinctly stronger developed than the inner, leaving the sulcus spermaticus largely open. At the tips of the two apical lobes, the two stiff, hardened hemibacula are emerging. The inner hemibaculum is concave towards the sulcal plane and apically broadened, bearing 19 tips, that are arranged in a single row on its terminal margin. The outer, smaller hemibaculum terminates in two pointed processes. 15 rows of paryphasmata are running to the outer lobe only, nearly encircling the outer hemibaculum. The basal 5 paryphasmata bear well-defined mineralised subrectangular plates, whereas the remaining rows are developed as weakly hardened ridges only. Truncal and pedicellar area smooth, without ornamentation.



Fig. 2. Total view of the male holotype of *Varanus juxtindicus* sp. n. as compared to an adult human. Photo: W. BÖHME.

Gesamtansicht des männlichen Holotypus von *Varanus juxtindicus* sp. n. in Relation zu einem erwachsenen Menschen.



Fig. 3a. Lateral view of the head of the holotype of *Varanus juxtindicus* sp. n. with the original field label. Note the tongue colouration. Photo: W. BÖHME.

Seitenansicht des Kopfes des Holotypus von *Varanus juxtindicus* sp. n. mit dem originalen Feldetikett. Man beachte die Zungenfärbung.



Fig. 3b. Sacral region and tail base of the holotype of *V. juxtindicus* sp. n. Photo: W. BÖHME.

Kreuzregion und Schwanzwurzelbereich des Holotypus von *Varanus juxtindicus* sp. n.



Fig. 3c. Detail of the dorsal scapulation of the holotype of *Varanus juxtindicus* sp. n. to show the characteristic colour pattern. Photo: W. BÖHME.

Detail der Rückenbeschuppung des Holotypus von *Varanus juxtindicus* sp. n.

Variation: The single juvenile and the three halfgrown paratypes differ from the adult male holotype in their body proportions, due to their smaller size. Apparently, also due to ontogenetic variation, they do not have the extreme temporal swellings of the latter. Remarkably, all of them have the same tail shape as the holotype, namely a tail round in cross section over its first third, without a differentiated double dorsal crest. This important diagnostic character of *V. juxtindicus* n. sp. is therefore apparently constant throughout all ontogenetic stages. The scale counts of the four paratypes are close to those of the holotype and produce a homogenous picture (Tab. 1, Fig. 1). In terms of colour pattern, only the juvenile paratype deviates from the semiadult and adult specimens in having a dark, fine reticulate to ocellate pattern of the underside of the body, which is fading in the subadults, and yellowish light and patternless in the adult male. Finally, the tongue colour is constant in all paratypes and corresponds to the situation of the holotype described above (Fig. 5).

Etymology: From Latin “iuxta” = “next to”, or “close to”; referring to the close relationship with *Varanus indicus*.

4 Discussion

Systematic position: According to its genital-morphological characters *Varanus juxtindicus* is clearly a member of the subgenus *Euprepiosaurus* FITZINGER, 1843. Within this clade, it is assignable to the *V. indicus* group (see ZIEGLER & BÖHME 1997, 1999). The unilateral development of the paryphasmata links *V. juxtindicus* with *V. caerulivirens*, *V. cerambonensis*, *V. indicus* and *V. melinus*. This differentiation of paryphasma rows on only one side of the hemipenis is clearly a reduction and therefore derived. The bilateral occurrence of paryphasmata on both hemipenial lobes - as observed in *V. doreanus*, *V. finschi*, *V. jobiensis* and *V. yuwonoi* - represents consequently the primitive condition (ZIEGLER & BÖHME 1997, 1999, ZIEGLER, PHILIPP & BÖHME 1999, PHILIPP et al. 1999). The apical paryphasmata on the hemipenis of *V. juxtindicus*, which are in addition developed as weakly hardened ridges, must be interpreted as an ongoing reduction of the hemipenial ornamentation within the *V. indicus* group. Thus, from the genital-morphological point of view, *V. juxtindicus* is a derived member of this group.

Accordingly, the lack of blue pigmentation especially on the tail, the relatively low scale counts, and the anteriorly darkened tongue corroborate this view (BÖHME et al. 1994, BÖHME & ZIEGLER 1997, 1999, ZIEGLER, BÖHME & PHILIPP 1999, PHILIPP et al. 1999), as does the roundish tail shape, which is clearly secondary within this group. Nonetheless, molecular methods would be useful to further clarify the systematic

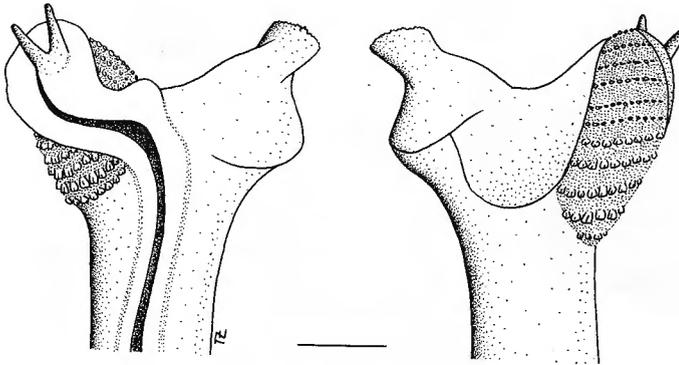


Fig. 4. Sulcal (left) and asulcal view (right) of the right hemipenis of the holotype of *Varanus juxtindicus* sp. n. (scale bar = 5 mm). Drawing: T. ZIEGLER.

Sulkale (links) und asulkale (rechts) Ansicht des rechten Hemipenis des Holotypus von *V. juxtindicus* sp. n. (Maßstab = 5 mm).

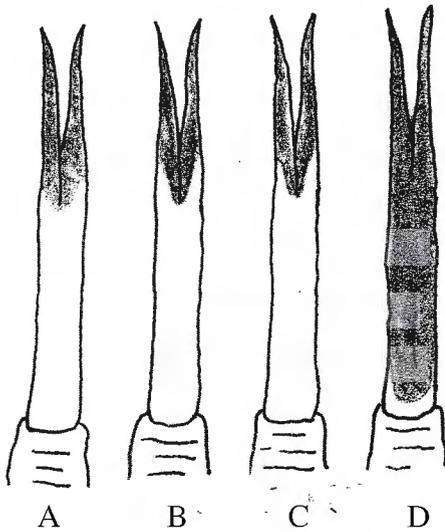


Fig. 5. Tongue pigmentation of *Varanus juxtindicus* (A-C) and *V. indicus* (D); A: holotype (fully adult); B: paratype ZFMK 72865 (half-grown); C: paratype ZMUC E 617 (juvenile); D: ZSM 15/1970; Aird Hill, southern Papua New Guinea. Drawing: K.M. PHILIPP.

Zungenfärbung von *Varanus juxtindicus* sp. n. (A-C) und *V. indicus* (D); A: Holotypus (voll adult); B: Paratypus ZFMK 72865 (halb-wüchsig); C: Paratypus ZMUC E 617 (Jung-tier); D: ZSM 15/1970; Aird Hill, südliches Papua-Neuguinea.

position of *V. juxtindicus* in particular and the phylogeny of the entire *V. indicus* species group in general.

Distribution, habitat and life habits: According to our current knowledge, *V. juxtindicus* is endemic to Rennell Island within the Solomon archipelago (Fig. 6). However, a Solomonese specimen from Olu Malau figured by McCoy (1980) has also a relatively low, roundish and seemingly weakly compressed tail - in spite of this author's characterization of these lizards as having the tails "strongly compressed laterally with a distinct caudal keel" (see our introduction above). Therefore we cannot rule out that *V. juxtindicus* might occur - perhaps due to passive transportation by man (see also CROMBIE & PREGILL 1999) - also on other islands of the Solomon archipelago, for instance on Olu Malau, possibly even in sympatry with *V. indicus*. True *V. indicus* were at our hands from Guadalcanal Island (see fig. 8, right specimen).

Rennell Island is the southernmost island of the Solomon archipelago and represents a post-Pliocene raised coral atoll, geologically younger than most of the rest of the Solomon Islands (GROVER 1960, WOLFF 1968, 1991). Rennell Island covers an area of about 650 km² (including Lake Tegano with 155 km²) and is still predominantly covered with different types of pristine rain forest (WOLFF 1955a, 1968, 1991, WINGHAM 1997).

Within the Solomon Islands, Rennell Island has the highest rate of endemism for an island of its size: for instance ten plant species, four species and nine subspecies of birds, the sea snake *Laticauda crockeri* of Lake Tegano, and the macrochiropteran *Pteropus rennelli* are endemic to this island (WINGHAM 1997). This high rate of endemism underlines the importance of Rennell Island as a stepping stone in the dispersion and evolution of species in the western Pacific Ocean and therefore for island biogeography in general. This has been the major criterion for the UNESCO to inscribe East Rennell as a Natural Heritage Site in 1998 (<http://www.unesco.org. whc/nwhc/pages/sites/main.htm>). The discovery of *Varanus juxtindicus* as a big-growing impressive reptile and certainly a top predator within its ecosystem, underlines again this outstanding role of Rennell Island.

Information on the ecology of *V. juxtindicus* is nearly lacking. Comments on the label of the holotype and in the field notes of the Noöna Dan Expedition (see WOLFF 1968, 1991) say, that it was "shot from a tree trunk within Lake Tegano". This fits observations made by MCCOY (1980), who saw individuals of "*V. indicus*" on Rennell Island (certainly in fact our new species) living around the shore of Lake Tegano to be mostly aquatic.

Despite this reportedly aquatic lifestyle the most important morphological specialisation for such a lifestyle, namely a laterally compressed tail with a median dorsal fin on its anterior one-third, supported by the prolonged neurapophyses of the caudal vertebrae, is surprisingly least developed in this species as compared with its fellow species in the *V. indicus* group (Figs. 7 and 8). BEDFORD & CHRISTIAN (1996) related the degree of lateral tail compression in 28 species of monitor lizards with their habitats and lifestyles and claimed that "arboreal/aquatic" species with laterally compressed tails would exist in four different phylogenetic lines. Their examples refer even to five different clades (according to the subgeneric division by ZIEGLER & BÖHME 1997): *V. niloticus* (*Polydaedalus* clade), *V. indicus* (*Euprepiosaurus* clade), *V. salvator* (*Soterosaurus* clade), *V. mertensi* (*Varanus* s. str. clade) and *V. mitchelli* (*Odatria* clade). They also added *V. (Odatria) "semiremex"* (sic) to the last named group, although this species has the "tail round in cross section at the base, but the last two-thirds moderately but distinctly laterally compressed though lacking a median keel" (COGGER 1994). This means, that the tail morphology of *V. semiremex* is perfectly analogous to that of *V. juxtindicus*, and that its closest relative, namely *V. (O.) mitchelli*, which has the "tail strongly laterally compressed, except at the base, with a distinct median keel" (COGGER 1994), corresponds better to the situation seen in *V. indicus* and its relatives (e. g. *V. finschi*: see Fig. 7). This example shows, that the correlation between tail shape and habitat plus lifestyle may be less strong than assumed by BEDFORD & CHRISTIAN (1996), because for instance *V. mitchelli* may also occur in waterless habitats, whereas *V. semiremex* (literally translated: half-brother) seems to be strictly bound to estuarine and riverine habitats. An analogous situation could also be true for *V. indicus* as compared with its new relative described here.

The locals of Rennell Island are aware of a single species of monitor lizard inhabiting their island. They name it "te hokai" (WOLFF 1955b).



Fig. 6. Map of the Solomon Islands with the two locality records of *Varanus juxtindicus* sp. n. (dots).
 Karte der Salomonen mit den beiden Lokalitäten von *Varanus juxtindicus* sp. n. (Punkte).



Fig. 7. Tail shape of *Varanus juxtindicus* sp. n. (above holotype) as compared with an equal-sized close relative (*V. finschi*, ZMUC: from Bismarck archipelago). Photo: W. BÖHME.
 Schwanzform von *Varanus juxtindicus* sp. n. (oben Holotypus) im Vergleich zu einem gleich großen, nahen Verwandten (*V. finschi*, ZMUC, vom Bismarck-Archipel).

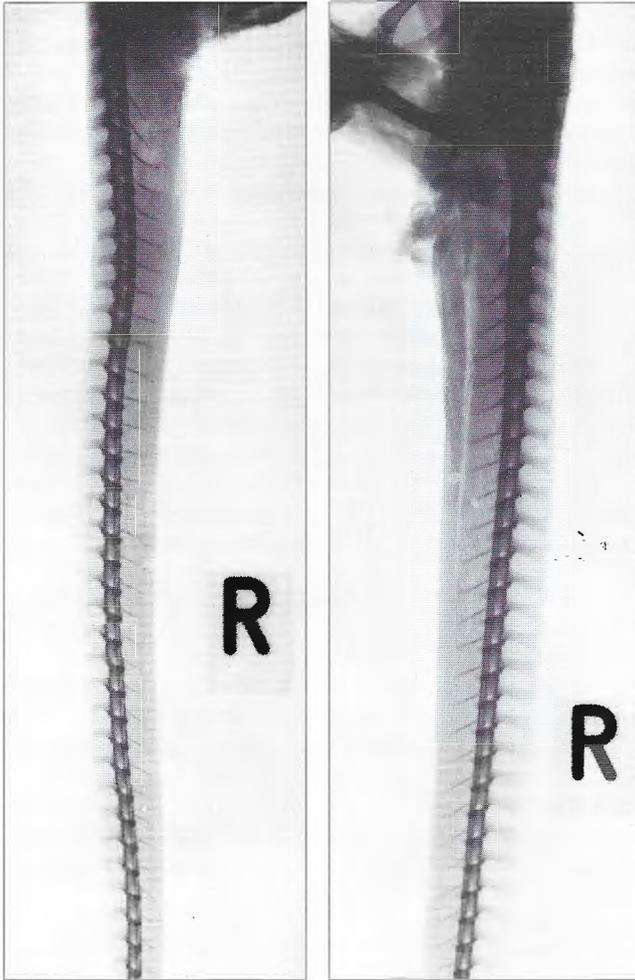


Fig. 8. X-ray photograph in lateral view of the tails of *Varanus indicus* (right: ZFMK 58051, Solomon Islands: Guadalcanal) and an equal-sized *V. juxtindicus* sp. n. (paratype ZFMK 72865) to show the different height of the neuropophyses. Photo: M. SCHENZLE.

Laterales Röntgenbild der Schwänze von *Varanus indicus* (rechts: ZFMK 58051, Salomonen: Guadalcanal) und *V. juxtindicus* sp. n. (Paratypus ZFMK 72865) zur Demonstration der verschiedenen Neuropophysenhöhe.

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