

VARANUS (REPTILIA, SAURIA) FROM THE PLEISTOCENE OF TIMOR

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With one plate

The present note deals with two varanid vertebrae from Pleistocene gravel deposits at Raebia in the Atambua area of Indonesian Timor. The specimens were collected in 1966 by Dr. Th. Verhoeven, who gave them to me for study. Other fossil vertebrate remains from the same site belong to a giant land tortoise, *Geochelone atlas* (Falconer & Cautley) also known from the Pleistocene of India, Java and the Celebes (Hooijer, 1971), and *Stegodon timorensis* Sartono, a pygmy proboscidean comparable to those of the Pleistocene of the Celebes and Flores (Hooijer, 1972). No further remains of the varanid have been discovered, and the vertebrae may here be placed on record.

There are a thoracic vertebra, with the neural spine broken off and the condyle as well as the margin of the cup incomplete, and a caudal vertebra with facets for the chevrons, lacking the right transverse process but with the left partially preserved, and the base of the neural spine present. Three views of each of these two vertebrae are given in pl. 1.

The thoracic vertebra agrees rather well in size with those of a large (2.5 m long) skeleton of *Varanus komodoensis* Ouwens in the Leiden Museum (accessioned Oct. 10, 1928). The four thoracics of *V. komodoensis* in table 1 are the 5th, 10th, 15th and 20th, respectively; they do not differ much in shape or size among themselves. The Raebia thoracic vertebra differs from those of *V. komodoensis* in the width over the prezygapophyses being greater relative to that over the postzygapophyses, and in the neural spine being shorter anteroposteriorly. The prezygapophyses width in the Raebia vertebra exceeds the postzygapophyses width by 10 mm against 1-3 mm in *V. komodoensis*. In the recent species the base of the neural spine extends forward to very near the anterior border of the neural arch, whereas in the fossil it tapers out in the anterior half of the neural arch, the spine measuring only ca. 25 mm anteroposteriorly at base as opposed to 32-35 mm in the recent species. The ventral length of the fossil *Varanus* vertebra appears to be less than that in the recent also.

The caudal vertebra from Raebia has been compared with the anterior caudal vertebra of the *V. komodoensis* skeleton (table 2). It is evident that it belonged to an individual larger than that of the thoracic vertebra from Raebia. It differs from the recent vertebra in the greater relative width of the prezygapophyses, and in the neural spine being shorter at base, the same difference as found for the thoracic vertebra.

TABLE I
Measurements of thoracic vertebrae of *Varanus* (in mm)

	Raebia	<i>Varanus komodoensis</i>			
Length of centrum from anterior border of cup to posterior border of condyle	ca. 46	48	49	47	48
Length from posterior border of cup to posterior border of condyle	ca. 28	35	34	33	33
Length over pre- and postzygapophyses	46	44	46	45	44
Width over prezygapophyses	59	51	57	57	53
Width over postzygapophyses	49	50	55	56	50
Width of cup	31	32	30	29	31
Precondylar constriction	23	23	23	24	24
Anteroposterior diameter of neural spine at base	ca. 25	32	32	34	35

TABLE 2
Measurements of caudal vertebrae of *Varanus* (in mm)

	Raebia	<i>V. komodoensis</i>
Length of centrum from anterior border of cup to posterior border of condyle	56	41
Length from posterior border of cup to posterior border of condyle	44	31
Length over pre- and postzygapophyses	54	41
Width over prezygapophyses	49	38
Width over postzygapophyses	36	32
Width of cup	33	27
Precondylar constriction	23	19
Anteroposterior diameter of neural spine at base	20	24

Two *Varanus* vertebrae from the Mid-Pleistocene of Trinil in Java, left unidentified by Janensch (1911: 73), have been described and figured as *Varanus bolkayi* Fejérváry (1935: 122). It is to these that the Raebia vertebrae show much resemblance, and there are several vertebrae in the Dubois Collection of Java that are very similar to the Timor vertebrae. These are no. 6392 (Kedung Brubus), no. 11194, and no. 6348 (Trinil) the measure-

ments of which are given in table 3. The two specimens from Trinil recorded by Fejérváry are in the last two columns of table 3.

Like the fossil Timor vertebrae, the vertebrae of *Varanus bolkayi* have a relatively larger prezygapophyses width, and a more reduced neural spine diameter as compared with those of *Varanus komodoensis*. The difference between the vertebrae of *Varanus bolkayi* and those of *Varanus komodoensis*, however, is less marked than that between the fossil Timor vertebrae and those of *Varanus komodoensis*.

It is by no means certain that the differences between the Pleistocene Timor and Java vertebrae and those of recent *Varanus komodoensis* are of specific value; they may be of subspecific scope only. The occurrence of *Varanus komodoensis* on the two small islands Komodo and Rintja between Sumbawa and Flores, and on a small portion of western Flores, has the unmistakable appearance of a relict distribution. It would not be too much to suppose that the forms from Java (Trinil, Kedung Brubus), Komodo, Rintja, Flores, and Timor (Raebia) represent just a single (?super-) species the valid name of which is *Varanus komodoensis* Ouwens. *Varanus komodoensis*, then, must have been much more widely distributed in the Pleistocene than it is now, and discovery of its fossilized remains in other Lesser Sunda Islands is within the realm of possibilities.

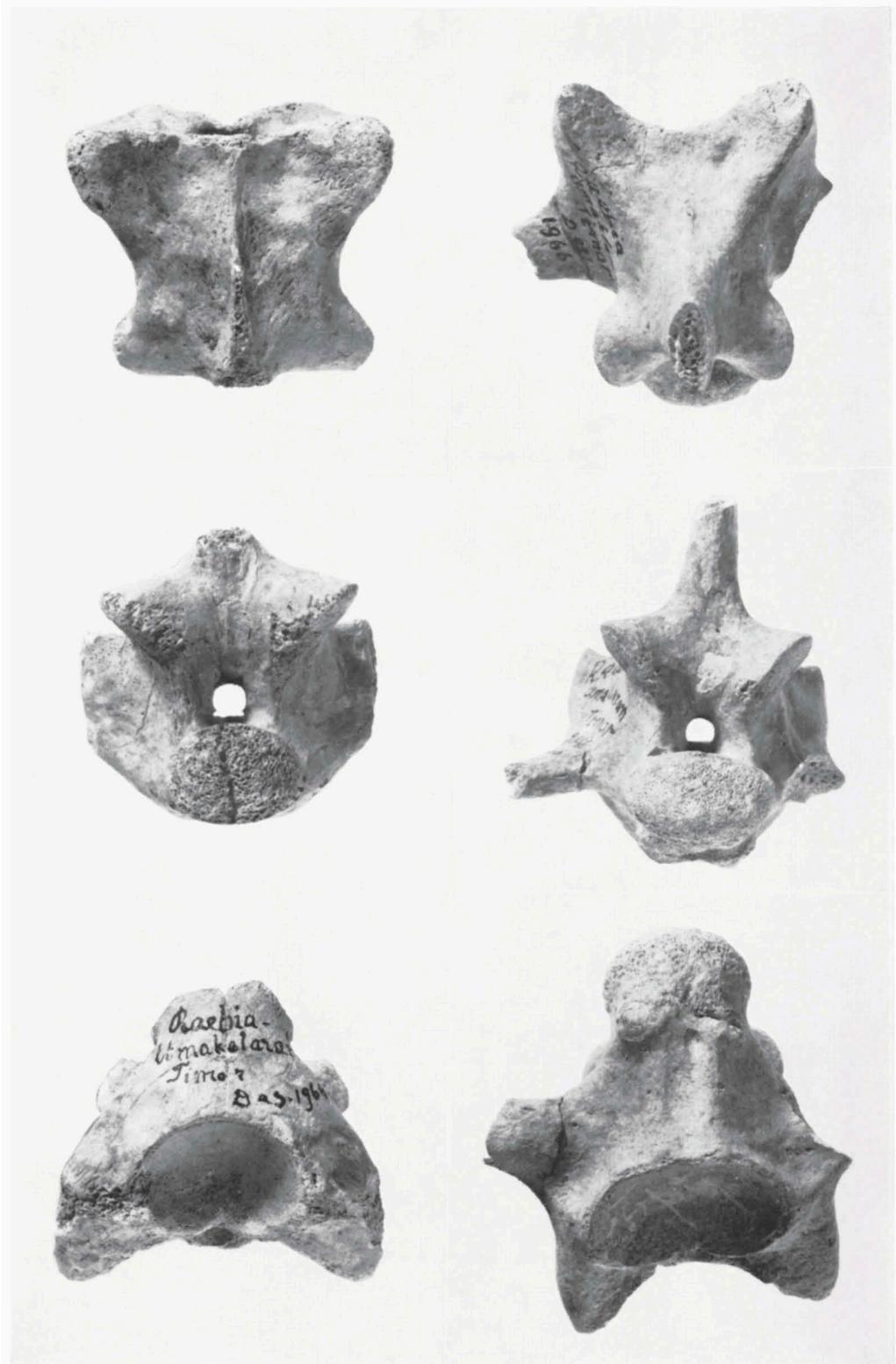
TABLE 3
Measurements of thoracic vertebrae of *Varanus* (in mm)

Coll. Dubois no.	6392	11194	6348	Fejérváry	
Length of centrum from anterior border of cup to posterior border of condyle	ca. 37	43	32	27	22
Length from posterior border of cup to posterior border of condyle	ca. 29	30	22	—	—
Length over pre- and postzygapophyses	43	40	30	26	24
Width over prezygapophyses	49	47	35	29	27
Width over postzygapophyses	44	ca. 38	29	—	23
Width of cup	26	26	21	16	14
Precondylar constriction	18	18	14	—	—
Anteroposterior diameter of neural spine at base	29	28	ca. 18	—	—

REFERENCES

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Varanus spec. (cf. *komodoensis* Ouwens), Raebia, Timor. Thoracic (left) and caudal (right) vertebrae; from top to bottom: dorsal, posterior, and ventral views. All figs. 0.9 nat. size. C. Hoorn phot.