

ON A NEW SPECIES OF LAND SHELLS OF THE GENUS
KALIELLA BLANFORD FROM THE SIMLA HILLS (MOLLUSCA,
GASTROPODA : FAMILY ZONITIDAE).

By A. S. RAJAGOPALAIENGAR, *M.Sc.*, *Zoological Survey of India,*
Calcutta.

INTRODUCTION.

This paper deals with four tiny land shells of the family Zonitidae received for determination from Dr. M. L. Roonwal, Entomologist, Forest Research Institute, Dehra Dun with the following interesting note regarding topography of the place from where the specimens were collected :—

“The shells were collected from the cups of *Arcenthobium minutissimum* Hook. F. (a parasitic plant belonging to the family Loranthaceae) found on the twigs of *Abies pindrow* (Silver fir) in the Simla Hills. These twigs were collected from tops of trees about 50 feet high growing alongside the road from Khadrāla to Nankhari about 1½ mile from the Khadrāla rest house (height 9700 feet above sea level) in the Lower Bashahr forest division, Himachal Pradesh. The material was collected on 21-5-51 by G. D. Bhasin, Assistant Forest Entomologist in this branch.”

Unfortunately, nothing is known about the soft parts of the snails. Though very small in size, the specimens, on a closer study, were found to exhibit certain very well-defined and significant features in their shell characters which left no doubt as to their distinctness from any of the hitherto known forms of the genus *Kaliella*. So, I approached Dr. H. C. Ray, Officer in charge of the Mollusca Section for elucidation. He after examining the same very critically came to a similar conclusion. But in order to be more sure about the identity, he sent the best specimen in the lot to the British Museum (Natural History), London, for opinion. In reply Dr. G. L. Wilkins also confirmed our surmise that it may be new to science. In view of the very small size of the shells, one may be inclined to think that these are young ones of some existing forms. But their well-developed umbilicus, with complete absence of carination at the periphery, convincingly prove that they are not immature but quite adult representing a peculiar form not so far described in the genus. The presence of a wide or narrow umbilicus and the presence or absence of carination at the periphery, have always been regarded as reliable features in the classification of the family Zonitidae. The radula, genitalia and other anatomical features may also be important, but these are not always available in dead and dry shells as happens to be the case in the specimens under report.

Kaliella was established as a subgenus of *Nanina* by Blanford (1863)¹, but later Godwin-Austen (1882)² raised it to the rank of a distinct genus, with Pfeiffer's *Helix barrackporensis* as the type. Further, the latter

¹ Blanford, W. T.—*Ann. Mag. Nat. Hist.* (3) II, p. 83 (1863).

² Godwin-Austen, H. H.—*Land and Freshwater mollusca of India*, I, pp. I,—2 (1882),

(1908)¹ provisionally arranged all the species of this genus under three different groups without applying any name to any one of them. The peculiarities observed in the specimens under report are so striking that they hardly permit of their inclusion into any of Godwin-Austen's groups. This may necessitate the creation of a separate section or subgenus for them. But since no definitely designated subgenera exist in this genus, I would not like to create one with the limited material in hand.

Although the collection data could hardly be more precise and complete than the one already supplied by Dr Roonwal, it still leaves one in doubt about the bionomics of the animal. The occurrence of shells in one of the cups of *Arcenthobium minutissimum* (as shown in



Text fig. (Nat. size).—A twig of *Abies pindrow* having outgrowths of cups of the parasitic plant *Arcenthobium minutissimum*. C. The cup in which the shells of *Kaliella bhasini*, sp. nov. were found.

text-fig. 1) at a height of about 50 feet from the ground is really noteworthy and it may lead one to think that the occupants (the animals) were possibly arboreal in habits. But it is difficult to say anything more on this point without any knowledge of the life-history, bionomics and anatomy of the soft parts of the snail concerned.

¹ Godwin-Austen, H. H.—*Fauna Brit. Ind.* (*Mollusca Testacellidae and Zonitidae*), pp. 258, 262, 264, 266, 270, 272, 273, 274 (1908).

The shells are known to have been collected in May 1951, but the remanants of *epiphragm* or false operculum found attached to the lips of the aperture here and there, indicate that the animals might have died not very long ago, probably while passing through the period of hibernation during the previous winter. The fresh condition of the twig bearing the cups of that parasitic plant seems to lend support to this view.

I wish to designate the new species as *Kaliella bhasini* after Mr. G. D. Bhasin, who collected the specimens from a fairly high altitude.

In order to avoid difficulty in identification an attempt has been made here to give different aspects of the shells as far as possible which would clearly show the possible variations in their important characters.

***Kaliella bhasini*, sp. nov.**

(Plate IV, figs. 1-12.)

Shell dextral, thin, very fragile, somewhat globosely-conoid, widely umbilicated as in the genus *Rahula*, dark horny brown in colour, very finely and obliquely striated throughout, striations close but appearing longer ventrally; apex obtuse; whorls $3\frac{1}{2}$ to $4\frac{1}{2}$, convex, gradually increasing in size, bodywhorl largest but without any carination at the periphery as in *K. ? nana* (Hutton); sutures well-impressed; aperture large, lunate with the columellar margin somewhat vertical, slightly curved and reflected, while the peristome thin and rounded.

Out of the four specimens received for identification, the smallest one was badly damaged owing to the extremely fragile nature of its shell while the diagrams were being made.

Measurements of the shells.—The largest shell in the lot measures 2.1 mm. and 2.4 mm., while the smallest one 1.4 mm. and 1.6 mm. in height and diameter respectively.

Holotype.—Reg. No. M. 16186/2 Zool. Surv. Ind.

Paratypes.—Reg. No. M. 16187/2 Zool. Surv. Ind.

Remarks.—The new species *Kaliella bhasini* appears quite remarkable in having a very wide umbilicus and non-carinated bodywhorl—a peculiar combination, not so far met with in the genus *Kaliella*—the former indicating its affinity with species of the genus *Rahula*, while the latter with *K. ? nana* (Hutton).

ACKNOWLEDGEMENTS.

I am greatly indebted to Dr. G. L. Wilkins of the British Museum (Natural History) for his expert opinion, to Dr. H. C. Ray, Officer-in-charge, Mollusca Section, for his helpful guidance and kind criticisms and to Dr. S. L. Hora, Director, Zoological Survey of India, Calcutta, for his suggestions. My thanks are also due to Shri A. K. Mondal for nicely drawing the figures.