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AN UNUSUALLY THICK-SHELLED *ACHATINA*
FROM THE KIVU REGION, BELGIAN CONGO (1).

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(Cambridge, Massachusetts).

The collections of African mollusks of the Brussels Museum contain a series of specimens of a small *Achatina* remarkable for the unusual thickness of the shell. This is probably correlated with the peculiar environment of the animals, which were living at the margins of thermal springs rich in mineral matter.

Achatina (Pintoa) *thermalis*, new species

(Figs. 1-10.)

Shell small, imperforate, elongate-conic, very solid and unusually thick, shiny throughout. Ground color porcellaneous-white, with bold, irregular, more or less axially arranged or oblique, zigzag streaks of chestnut-brown; usually the streaks becoming wider toward the periphery and coalescing at the base of the body-whorl. Apex obtuse, white, glass-like. Whorls 6 1/2 to 7 in adult shells, slightly convex, with impressed, non-crenulated sutures. Spire conic, narrow, produced at an angle of 30° to 45°. Aperture nearly vertical, elongate-ovate, white internally with a slight bluish tinge; palatal lip (peristome) thin, occasionally marginate within, narrowly rounded and slightly flaring at the base; parietal wall thinly glazed, white. Columella narrowly truncate, long, straight in front view and arched inwardly in profile, white with a slight bluish tinge. In several

(1) *Studies of African Land and Fresh-water Mollusks*. XII.

specimens there is an abnormal calcareous growth upon the inner face of the aperture, which tends to narrow materially the opening and in some cases is built forward sufficiently to fill up the truncation of the columella. First 1 to 1 1/2 whorls entirely smooth; the remainder of the shell appearing smooth to the naked eye; under a high magnification the post-embryonic whorls very faintly granulose; the following whorls with very fine axial growth-lines and exceedingly fine spiral threads just visible with a 14 X lens.

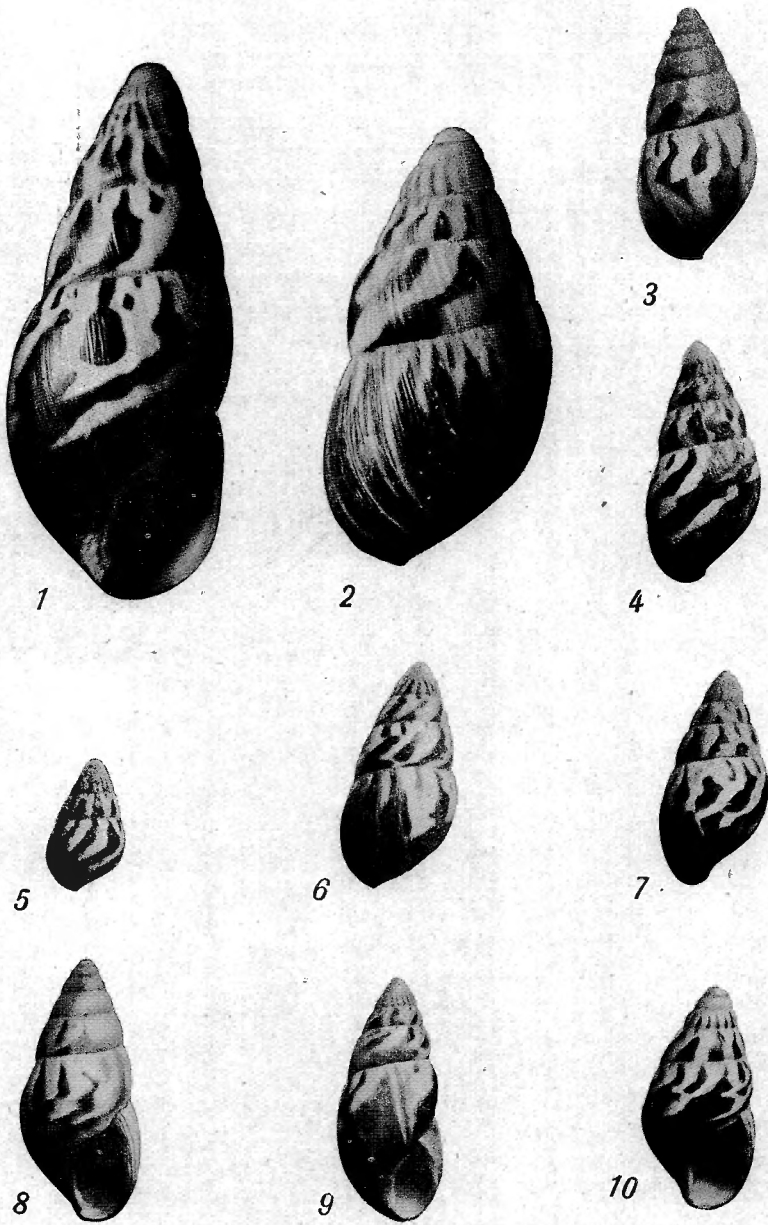
MEASUREMENTS.

| Length | Width | Aperture length | Aperture width | |
|--|----------|-----------------|----------------|----------|
| 35.6 mm. | 15.2 mm. | 12.8 mm. | 6.0 mm, | Holotype |
| 36.4 | 16.0 | 14.7 | 8.0 | Paratype |
| 34.0 | 16.2 | 13.0 | 6.6 | " |
| 31.8 | 14.5 | 9.1 | 4.1 | " |
| (with aperture constricted abnormally) | | | | |
| 31.3 | 15.5 | 14.5 | 7.0 | " |
| 28.6 | 15.1 | 11.8 | 7.0 | " |
| 29.8 | 15.5 | 13.2 | 7.0 | " |

Holotype. — Musée royal d'Histoire naturelle de Belgique, Brussels: Katana (west shore of Lake Kivu) near the hot mineral springs of Kakondo, Belgian Congo. N. Boutakoff Collector. *Paratypes* from the same locality and collector in same museum and at the Museum of Comparative Zoölogy (N° 111711).

The shells were all found dead and only a few of them are in good condition. In many specimens the color markings are partly or entirely faded. This is particularly the case in shells extracted from a calcareous tufa in which they had become imbedded after death. The water of the springs at the margins of which this *Achatina* was found, has a temperature of 60° C. and is extremely rich in CO₂ and dissolved lime. These peculiar conditions of the environment are obviously responsible for the thickness of the shell and for the abnormal growth which in some specimens considerably narrows the aperture. It should be emphasized that this abnormal growth is not a deposit of extraneous lime, but a secretion of the living animal.

The specimens were referred to *Achatina sylvatica* PUTZEYS by the late Mr. P. Dautzenberg. They differ, however, considerably from several lots of *A. sylvatica* before us, not only in



Figs. 1 to 10. — *Achatina (Pintoa) thermalis* BEQUAERT and CLENCH.
 Figs. 1 and 2 twice natural size; Figs. 3 to 10 natural size. Fig. 1
 is the holotype.

the much thicker texture, but also in the outline of the shell, which is much more elongate and narrower, smaller for the same number of whorls and much more shiny. The same characters separate *A. thermalis* from *A. dewittei* BEQUAERT and CLENCH, which, in addition, has a peculiar sculpture of superficial axial welts. In general shape and in the almost smooth surface it is not unlike *A. pfeifferi* DUNKER, although that species is even more elongate, with a proportionally higher spire, and a distinct finely decussate sculpture on the early postembryonic whorls. The decussate sculpture of the postembryonic whorls is also quite distinct in *A. sylvatica*.

Museum of Comparative Zoölogy.