

where the soil probably receives considerable lime from the limestones further up the slope. Altitude 7,000 feet. The snails were hiding under rose, sage and other brush, but not hard to find. The colony extended over the whole slope, but individuals were scarce in the aspen and scrub-oak groves. Throughout the whole region I have not found the snails abundant on the non-calcareous formations.  
(*To be concluded.*)

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#### A REVISION OF THE ANCYLI OF SOUTH AFRICA.

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BY BRYANT WALKER.

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Several months ago Messrs. H. C. Burnup of Maritzburg, Natal, John Farquhar of Grahamstown, Cape Colony, and John Ponsonby and M. Connolly of London, placed in my hands for examination a large collection of the *Ancyli* of South Africa. In order that the results of the investigation might be available for immediate use elsewhere, the following summary has been prepared. A fully illustrated report with complete bibliographic references, comparative remarks, etc., is in preparation and will be published in the immediate future.

The region included in the report is bounded on the north by the Zambesi and Kunene rivers.

#### Genus ANCYLUS Geoffroy.

Section *Burnupia* n. sec.

Shell dextral; apex punctate, in a more or less radial pattern.

Type: *Ancylus caffer* Krauss.

#### I. *Ancylus caffer* Krauss.

1848. *Ancylus caffer* Krauss, Sudafr. Moll., p. 70, pl. 4, fig. 13.

1859. *Ancylus gaulus* Gould, Pr. B. S. N. H., VII, p. 40.

Type locality: (*caffer*), Pietermaritzburg, Natal.

(*gaulus*), Cape of Good Hope.

Also: Umkomaas; Imputyni stream near Maritzburg; Inkwalini stream near Maritzburg; Tongaat; and Equeefa River, Natal (Burnup).

#### Var. *nanus* n. v.

Shell smaller than typical *caffer*, proportionately shorter and



broader, being obovate rather than oval; apex less depressed; dark brown.

Length 4.5, width 3.5, alt. 1.75 mm.

Type locality: Karkloof stream, Natal (Toynton). Also: Maritzburg, Natal (Ponsonby).

Type, No. 36002, coll. Walker.

Var. *gordonensis* Melv. and Pons.

1903. *Ancylus* (*Ferrissia*) *gordonensis* M. and P., A. M. N. H., xii, p. 606, pl. xxxi, fig. 2.

Type locality: Gordon Falls, near Pietermaritzburg, Natal. Also, Edendale Falls, Umzindusi River; Howick Falls, Umgeni River; Nottingham Road; Town Bush Valley stream, Maritzburg; Sweet-water stream near Maritzburg; Aarvogel Krantz, Umgeni River; Dargle, Umgeni system (Burnup); Karkloof stream (Burnup and Morton) and Umgeni River, Natal (Ponsonby); Zoutspansberg, Transvaal (Cragoe).

Var. *farquhari* n. v.

Much smaller than typical *gordonensis*, to which it is most closely allied; thicker and darker; apex more prominent, but scarcely at all depressed.

Length 4.8, width 3.75, alt. 2 mm.

Type locality: York, East Griqualand (Farquhar). Also, Teko River, Transki (Hickey).

Type, No. 36003, coll. Walker.

Var. *stenochorias* Melv. and Pons.

1903. *Ancylus* (*Ferrissia*) *stenochorias* M. and P., A. M. N. H., xii, p. 607, pl. xxxi, fig. 1.

1853.? *Ancylus obliquus* Krauss, in Kuster Con. Cab., *Ancylus*, pl. 1, figs. 18-20, non Brod. and Sby., 1832.

1882.? *Ancylus caffer* Clessin, Con. Cab., *Ancylus*, p. 36, pl. 1, figs. 18-20.

1889.? *Ancylus caffer* Morelet, J. de Con., xxvii, p. 20.

Type locality: Ebb en Vloed, Port Elizabeth, Cape Colony. Also, Van Staden's River and Bog Farm, Port Elizabeth (Ponsonby); Bakken's River, Port Elizabeth (Farquhar); Upper Retreat and Klipplatz River, Cathcart (Ponsonby); Kaiser River, Montagu (Connolly); King William's Town Road Dam and Kowie River, Grahamstown (Farquhar).



Var. *capensis* n. v.

Shell rather thin, translucent, oval, brownish horn color, darker on the apex; surface with fine, regular growth-lines and very fine, close, somewhat irregular radial striæ; apex prominent, subacute, strongly turned to the right, but not much deflected except at the extreme tip; anterior slope convex, somewhat flattened towards the apex; posterior slope concave; right slope convex; left slightly concave.

Length 7.5, width 4.5, alt. 2.5 mm.

Type locality: Lakeside, Cape Peninsula (Connolly). Also, Hoot Bay, Cape Peninsula (Connolly); Woost Hill River and Blaukrantz River, Grahamstown (Farquhar).

Type, No. 36004, coll. Walker.

Var. *trapezoideus* O. Bøttger.

1907. *Ancylus trapezoideus* O. Bøttg., in Schultze, "Aus Nama-land und Kalahari," p. 708,

1910. *Ancylus trapezoideus* O. Bøttg., Abh. Senckenb. Naturf. Ges., Frankfurt, xxxii, p. 45, pl. 28, fig. 15.

1897.? *Ancylus caffer*, v. Mts., Beschalte, p. 151, pl. 1, fig. 19a, c and d.

Type locality: Witkop, British Bechuanaland. Sub-fossil. Also, Pretoria (McBean); Pretoria District (Connolly); Valsch River, Lindley, Orange Free State (Connolly); Crocodile Drift, Transvaal (Connolly); Zoutspansberg, Transvaal (Cragoe); ? Bach Tararo, Umdussuma (Stuhlmann).

II. *Ancylus mooiensis* n. sp.

Shell slightly obovate, the greatest width being in front of the center; thin, translucent, shining, light horn-color; surface with regular, but very fine, growth-lines and exceedingly delicate, wavy, radial striæ; apex about half-way between the center and the posterior margin, subacute, not prominent, but slightly turned to the right and very little deflected; anterior slope convex, but flattened above and nearly straight as it approaches the anterior margin; posterior slope long and regularly, but not deeply, concave; right slope slightly convex; left nearly straight, slightly concave about half-way down.

Length 6.25, width 3, alt. 2.5 mm.



Type locality: Mooi River, Potschefstroom, Transvaal (Livingston).

Type, No. 36005, coll. Walker.

Var. *dubiosus* n. v.

Shell narrower; apex more obtuse, less prominent and decidedly turned to the right.

Type locality: Pienaars Poort near Pretoria (Connolly). Also, Woost Hill River. Grahamstown (Farquhar).

Type, No. 36006, coll. Walker.

### III. *Ancylus transvaelensis* Craven.

1880. *Ancylus transvaalensis* Craven, P. Z. S., London, 1880, p. 617, pl. lvii, fig. 11.

1907.? *Ancylus* (*Ferrissia*) *stenochorias* O. Boettger, in Schultze, "Aus Namaland und Kalahari," p. 708.

1910.? *Ancylus* (*Ferrissia*) *stenochorias* O. Boettger, Abh. Senckenb. Naturf. Ges. Frankfurt, xxxii, p. 450.

Type locality: Mooi River, Transvaal (Craven). Also, Pretoria District, Transvaal (Connolly); Vereeniging, Orange Free State (Johnson); Prieske, Orange River system, Cape Colony (Ponsonby);? Witkop, British Bechuanaland (Boettger).

### IV. *Ancylus verreauxii* Bourguignat.

1853. *Ancylus verreauxii* Bgt., Rev. et Mag. de Zool., 1853, p. 351.

1854. Bgt., *ibid.*, 1854, pl. 1, fig. 1.

1856. Bgt., Amen. Mal., p. 12, pl. 1, fig. 1.

1882. Clessin, Con. Cab., *Ancylus*, p. 60, pl. 5, fig. 4.

1862. *Ancylus verreauxii* Bgt., Spicil. Mal., p. 194.

Type locality: "Ville de Constance," Cape of Good Hope. Also, Retreat, Cape Peninsula (Connolly).

Section *Ferrissia* Walker, 1903.

*Ferrissia* Walker, NAUTILUS, XVII, p. 15.

Type, *Ancylus rivularis* Say.

### V. *Ancylus burnupi* n. sp.

Shell small, depressed, long oval, lateral margins nearly parallel, only slightly convex, the left more than the right, anterior margin



regularly rounded, posterior margin more or less obliquely truncated on the right side; very thin, diaphanous, translucent, white, shining, polished; lines of growth regular, but minute; anterior surface with faint, irregular, radial ripples; apex about half way between the center and posterior margin, obtuse, scarcely projecting and slightly turned to the right; anterior slope but slightly convex; posterior nearly straight; a little concave in the center; right slope slightly convex; left nearly straight.

Length 4; width 2.2; alt. 1 mm.

Type locality: Equeefa River, Natal (Burnup). Also, Brack Kloof River, Grahamstown, Cape Colony (Farquhar).

Type, No. 36007, coll. Walker.

VI. *Ancylus connollyi* n. sp.

Shell small, subconical, oval, lateral margins nearly parallel, the left slightly more convex, anterior and posterior margins regularly rounded; thin; translucent, light horn-color, almost white; growth-lines fine, rather irregular, anterior surface somewhat wrinkled transversely; apex about one-fifth from the posterior margin, obtuse, prominent, slightly turned to the right; anterior alone slightly convex; posterior slightly concave, nearly straight; lateral slopes nearly straight, the right a little convex.

Length 3.75; width 2.2; alt. 1.5 mm.

Type locality: Black River, Maitland, Cape Colony (Connolly). Also, King William's Town Road Dam, Grahamstown, Cape Colony (Farquhar).

Type, No. 36008, coll. Walker.

VII. *Ancylus equeefensis* n. sp.

Shell small, depressed, oval, the left margin slightly more curved than the right; anterior and posterior margins regularly rounded; thin, light horn-color; lines of growth fine and regular; apex close to posterior margin, very obtuse, but not prominent, distinctly turned to the right; anterior slope straight, except as it slightly curves towards the apex, posterior nearly straight from below the apex for two-thirds of its length, thence oblique to the margin; right slope slightly convex; left a little concave.

Length 3.75; width 2.1; alt. 1 mm.

Type locality: Equeefa River, Natal (Burnup).

Type, No. 36009, coll. Walker.



VIII. *Ancylus fontinalis* n. sp.

Shell small, depressed, long, oval, narrow, lateral margins parallel and nearly straight, anterior margin regularly rounded, posterior margin slightly truncated on the right side; thin, white; growth-lines very fine and regular; apex about half-way between the center and the posterior margin, rounded, obtuse, quite prominent, only slightly turned to the right; anterior slope long and nearly straight; posterior slope oblique, straight from the base of the apex to the margin, lateral slopes oblique, nearly straight, slightly incurved towards the margin.

Length 3.25, width 1.8, alt. 0.8 mm.

Type locality: Ranjesfontein, Pretoria District (Connolly). Also, Morgendal, Orange River Colony and Pienaars Poort, Pretoria (Connolly).

Type, No. 36010, coll. Walker.

IX. *Ancylus victoriensis* n. sp.

Shell minute, rather narrow, slightly obovate, the greatest width being at the anterior third of the length, anterior and posterior margins regularly rounded, lateral margins slightly curved, the left more than the right; thin; light greenish horn-color; lines of growth rather coarse and irregular, more or less rippled on the anterior slope; apex posterior, large, prominent, obtuse, scarcely, if at all, turned to the right; anterior slope very convex; posterior slope very short, nearly straight and scarcely oblique; lateral slopes about equally convex, the apex being in the longitudinal axis of the shell.

Length 2.25, width 1.5, alt. 0.75 mm.

Type locality: Victoria Falls, Zambesi River (Connolly).

Type, No. 36011, coll. Walker.

X. *Ancylus zambesiensis* n. sp.

Shell minute, subdepressed, short oval, anterior and posterior margins broadly rounded, lateral margins about equally curved; light greenish horn-color; surface with lines of growth distinct and irregularly rippled on the anterior slope; apex rather prominent, obtuse, in the longitudinal axis of the shell and not perceptibly turned to the right; anterior slope slightly convex; posterior slope oblique and straight; lateral slopes oblique and only slightly convex.

Length 2.25; width 1.6; alt. 0.75 mm.

Type locality: Victoria Falls, Zambesi River (Connolly).

Type, No. 36012, coll. Walker.



1912. "A revision of the Ancyli of South Africa." *The Nautilus* 25, 139–144.

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