

Suralcis Machatschke, a remarkable genus of African ruteline chafers

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ABSTRACT. — The Afrotropical genus *Suralcis* Machatschke is characterized, the two known species are keyed, and lectotypes are designated. The polymorphism and sexual dimorphism of the Kenyan species, *S. coriaceus* (Brenske), are illustrated; some new records are given. The possible significance of the modified hind legs of the male is discussed.

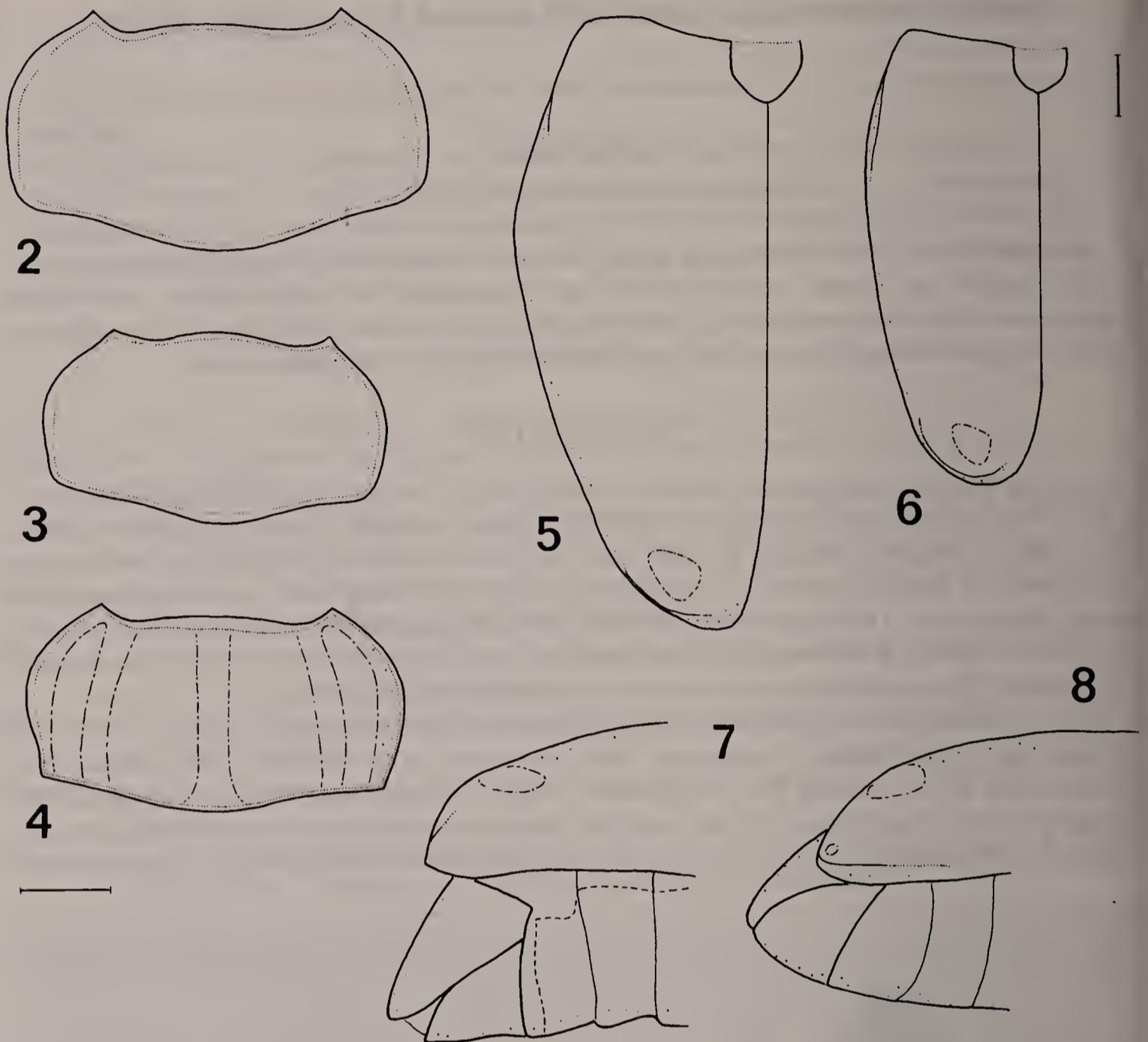
INTRODUCTION

In South Kenya a remarkable species of ruteline chafers occurs, *Suralcis coriaceus* (Brenske) (fig. 1). The larger males of this species have enormously "inflated", spine-bearing hind femora. We found *S. coriaceus* attracted to light near Voi, Tsavo National Park East, and collected a small series to illustrate both the remarkable extent of polymorphism and the nature of the sexual dimorphism. This illustration also seemed a good opportunity to present some synoptic notes on the genus, and consequently the material of the second known species, from Angola, was studied. The major differences are summarized in the key given below.

Our *S. coriaceus* were collected in an area of deciduous low orthophyll savanna at the foot of an inselberg called Mzinga; during our daily excursions in the Park we never noticed any *Suralcis*, and in the evening they simply flew to light. Consequently, one can only speculate about the possible significance of the modified hind legs of the males. It may be supposed, for instance, that, analogous to certain other scarabaeoid beetles (*Hoplia*), *Suralcis* males use their



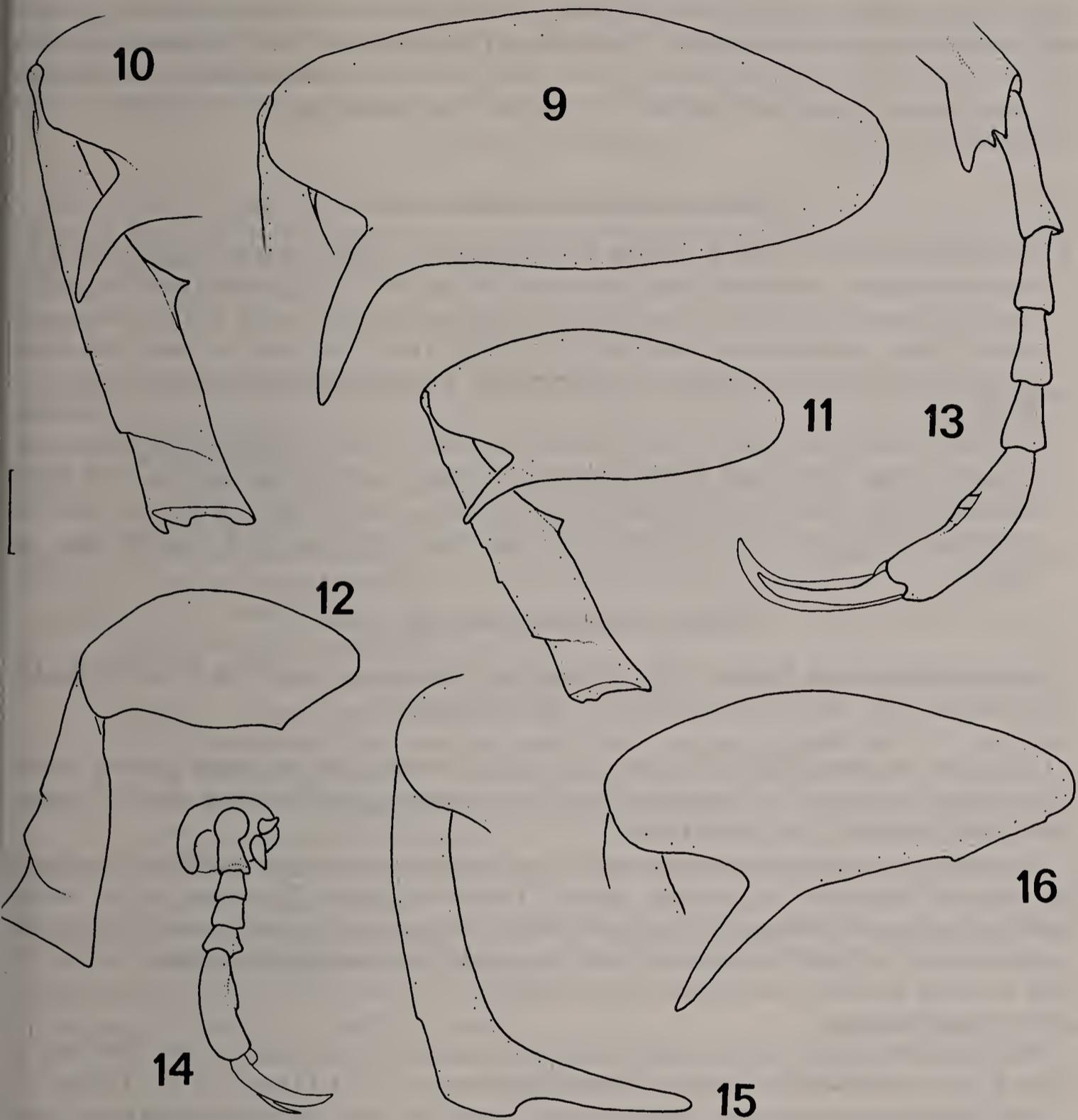
Fig. 1. *Suralcis coriaceus*, general appearance. Left to right: large, small male, female. Length of large male ca. 15 mm. Voi, Kenya.



Figs. 2-8. *Suralcis coriaceus*, Voi. Contours of: 2-4, pronota of large (2), small male (3), female (4). 5, 6, elytra of large (5) and small male (6). 7, 8, distal part (lateral view) of elytra and abdomens of male (7) and female (8). Scale lines = 1 mm; 2-4, 7-8, same scale, 5-6, same scale.

legs in courtship, clinging to particular plants with their fore and middle legs, moving the hind legs about in the air. Other scarabaeoids are known to hang on their hind legs upside down, with the four remaining legs free (*Pachypus*). A problem, however, is that all this happens in broad daylight, while *S. coriaceus* seems to be active at night. The white setose markings on the dorsum are very bright and may have something to do with nocturnal courtship. Possibly, the modifications of the hind legs just serve to improve the grasp of the male on the female during copulation. Finally, another possibility should be mentioned, vividly described by Longstaff (1906). Certain South African Hopliini with armed hind legs burrow into composite flowers eating out the ovaries, their body disappearing from view, the hind legs extending beyond the florets, widely separated, like open jaws. Disturbance causes the legs to close, resulting in a respectable pinch or bite inflicted by the armature on an object placed between the legs.

If the disjunct Northeast/Southwest Afrotropical distribution of the genus is real, three alternative explanations seem obvious in view of the rather strong differences between the two species: (1) this disjunction must be of a long standing (longer than the time-lapse since the last ecological corridor existed, ca. 5000 years ago, cf. Verdcourt, 1969); or (2), if the disjunction is recent, the evolutionary change must have been relatively fast; or (3) a combination of these alternatives applies. Similar disjunctive patterns are well known in certain vertebrate groups,



Figs. 9-14. *Suralcis coriaceus*, Voi. Contours of: 9-12, femora and tibiae of large male (9), medium-sized male (10), small male (11), female (12). 13, 14, hind tarsi of medium-sized male (13) and female (14). Figs. 15-16. *S. politus*, holotype male. Contours of: 15, hind tibia; 16, hind femur. All figures: same scale line = 1 mm.

e.g. in antelopes (*Oryx*; dikdiks) and birds (pygmy falcon *Poliohierax*), and in plants (cf. Verdcourt, l.c.).

Suralcis Machatschke

Suralcis Machatschke, 1970: 158 (replacement name for *Trigonochilus* Brenske). Machatschke, 1972: 340.

Trigonochilus Brenske, 1896: 33. Ohaus, 1912: 416. Machatschke, 1965: 103 (in key), 105. Non *Trigonocheilus* Agassiz, 1846: 165 (Coleoptera) and *Trigonochilus* Agassiz, 1846: 377 (Index).

This ruteline genus belongs in the tribe Adoretini, and is, within that group, characterized by a shortly pointed corneous labrum (very distinct in frontal view), a simply rounded clypeus, and by

the peculiarly modified hind legs of the males. The first-mentioned character places *Suralcis* with seven other genera in a subtribe Trigostomina (Machatschke, 1965; Trigonodostomina in Machatschke, 1972, 1974). The opaque dorsal side is, contrary to Machatschke's statement, not a generic character, as already implied by the name of the Angolan species. The habitus is most characteristic (see fig. 1).

Key to species of *Suralcis* (see figures)

1. Dorsum opaque due to well-developed microreticulation, which is much stronger in the male than in the female; elytra with large distal patch of long, white subappressed scale-like setae; lacking extremely long setae. Pronotum of female with median, lateral and lateromarginal zones of long, subappressed scale-like white setae. Hind tibial apex of male with short protrusions, halfway tibial length a well-developed internal angulation; metatarsus long. — Kenya *coriaceus*
- Dorsum polished, shiny; elytra with (at most) two small patches of long, white subappressed scale-like setae, one about halfway elytron, another distally; male elytron with 10-15 extremely long setae. Hind tibial apex with long, stout, inwardly directed, straight, tapering process; internal side of tibia entire; metatarsal length less than width of tibial apex. — Angola *politus*

Suralcis coriaceus (Brenske) (figs. 1-14)

Trigonocheilus coriaceus Brenske, 1896: 34 (type-loc. Ikutha), fig. 1-2. Ohaus, 1912: 416, fig. 15. Machatschke, 1965: 106, pl. 2 figs. 5 a-d; 1972: 340 (sub *Suralcis*).

During the November-December rains this species is common on the plains draining on the Tsavo-Ahti-Galana rivers in Southeast Kenya. It was originally described from the Kitui region, but the range extends to the coast (Lamu).

The males are violet-brown, opaque, due to a strong microreticulation; usually the head and the tarsi are infuscated, the pronotal colour is frequently lighter. The colour of the female pronotum, elytra, and abdomen, is moderately shiny, sometimes with a vague metallic tinge; the pronotum may be bright brownish red, and always has five setose bands from apex to base. In both sexes the scutellum has a dense cover of clear white setae, and two similarly setose spots are on the elytral apex.

The size of the males is very variable and the allometric development of the hind legs is distinct; I have illustrated the extremes. Approximate length ♂♂ 11-15 mm, ♀♀ 11-14.5 mm.

In the Berlin museum there is a large series of *S. coriaceus*, most of the specimens being from Ikutha, the type-locality. Four are labelled type, but Brenske had only one male and one female before him. Although the rough measurements given by Brenske do not agree completely, I am convinced that the specimens with the following labels should be designated lectotype and paralectotype, respectively, and have added the appropriate labels:

Male (lectotype): „Africa or./Ikutha” (printed), „Trigonocheilus/coriaceus ♂/Type Brsk.” (in Brenske's hand); female (paralectotype): „Africa or./Ikutha” (printed), „Trigonocheilus/coriaceus ♀/Type Brsk.” (in Brenske's hand); plus in both cases the yellow printed label: „Zool. Mus./Berlin”.

Further material examined from the following localities, months, collections (total 25 males, 23 females).

SE Kenya. — Ikutha, Kedai, Kibwezi, Lamu, Mulango, Nengia, Voi, “Luitpoldgeb. Westabhang”.

Months XI (3 specimens), XII (21 specimens). Collections Leiden, London, Berlin.

Suralcis politus (Arrow) (figs. 15-16)

Trigonocheilus politus Arrow, 1901: 394 (type-loc. Angola), fig. b. Machatschke, 1965: 106; 1972: 340 (sub *Suralcis*).

The type-specimens in the British Museum (Natural History), male (length 12.5 mm) and female (11 mm), have a locality label „Angola / 76.28". Nothing more is known about this species. The male is here designated lectotype.

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REFERENCES

- Agassiz, J. L. R., 1846. *Nomenclator Zoologici*. Nomina systematica generum Coleopterorum (with Erichson, G. F.), I-XI, (1), 1-170. Index universalis, I-VIII, 1-393, Jent & Gassmann, Solothurn.
- Arrow, G. F., 1901. Remarks on secondary sexual differences in rutelid Coleoptera, with descriptions of some new forms. — *Ann. Mag. nat. Hist.* (7) 7: 393-401, figs. a-b.
- Brenske, E., 1896. Trigonochilus n.g. Vertreter einer neuen Ruteliden-Gruppe aus der Verwandtschaft der Anoplognathiden. — *Ent. Nachr.* 22: 33-37, 2 figs.
- Longstaff, C. B., 1906. On some bionomic points in certain South African Lamellicorns. — *Trans. ent. Soc. Lond.* 1906: 91-95, 1 fig.
- Machatschke, J. W., 1965. Coleoptera Lamellicornia, Fam. Scarabaeidae. Subfam. Rutelinae Vol. 3. — *Genera Insect.* 199c: 1-145, figs. 1-25, pls. 1-2.
- , 1970. Rutelinae (Col., Scarabaeidae): Synonymische Bemerkungen. — *Ent. mon. Mag.* 105 (1969): 157-158.
- , 1972, 1974. Scarabaeoidea: Melolonthidae Rutelinae. — *Col. Cat. Suppl.* 66 (1) (1972): 1-361; (2) (1974): 363-429.
- Ohaus, F., 1912. Revision der Adoretini. (Col. lamell. Rutelin.). (Fortsetzung). — *Dt. ent. Z.* 1912: 411-426, figs. 10-19.
- Verdcourt, B., 1969. The arid corridor between the North-East and South-West areas of Africa. — *Palaeoecol. Africa* 4: 140-144, fig. 26.

Raamsteeg 2, Postbus 9517, 2300 RA Leiden.

LARSEN, SVEN GISLE, 1978. BALTIC AMBER — A PALAEOBIOLOGICAL STUDY: 1-192, 62 tekstfig., 12 platen, ca. 700 refs., index ca. 23 kolommen. No. 1 van de reeks Entomonograph. Scandinavian Science Press Ltd., Klampenborg, Denemarken. ISBN 87-87491-16-18. Prijs (gebonden) 120 D.Kr. (= US \$ 19.70).

De Baltische barnsteen vormt wel een van de allerbelangrijkste bronnen voor onze kennis van de tertiaire fauna van het formaat van insecten. Een recente samenvatting van de rijke literatuur hierover is erg nodig, en dus meer dan welkom.

Larsen geeft twee beknopte maar lezenswaardige hoofdstukjes over chemie van de barnsteen, en de palaeo-oecologie en -vegetatiekunde van het milieu van vorming. Hierna volgt een kort hoofdstukje over plantenfossielen in barnsteen (de botanie heeft andere, belangrijkere, bronnen van fossielen), en vervolgens de hoofdmoot, een bespreking van de in barnsteen aangetroffen diergroepen, meest Arthropoden. De volgorde waarin deze worden behandeld is chaotisch, maar de uitvoerige index compenseert dit. De verzorging van het boekje is uitstekend, en de illustraties zijn attractief.

Het is een waardig begin van de door Scandinavian Science Press gelanceerde reeks „Entomonograph", die onder leiding staat van L. Lyneborg. — W. N. Ellis.