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# A NEW SPECIES OF *PLATYONITIS* JANSSENS FROM KENYA, WITH NOTES ON THE GENUS (COLEOPTERA: SCARABAEIDAE)

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With 20 text-figures and 1 plate

ABSTRACT

The genus *Platyonitis* Janssens is diagnosed, and the two species are keyed. *P. smeenkorum* sp. nov. from Kenya is described and illustrated. *P. oberthuri* Janssens is illustrated and Kenyan records are given. The status of *Epionitis* Balthasar is briefly discussed.

Among the approximately 8000 scarabaeoid beetles from southeastern Kenya assembled over the past few years, particularly in the vicinity of Voi, Tsavo National Park, two obviously common onitine species proved to be most remarkable. They belong to *Platyonitis* Janssens, a genus hitherto considered monotypic. Part of our material agrees with *P. oberthuri* Janssens, apparently known from the two Mozambique type-specimens only. The other Kenyan specimens represent a second, new species, which is described below.

The sections of the Tsavo National Park in which virtually all the material was collected consist of deciduous orthophyll savanna (figs. 25, 26). Most of the specimens were attracted to the lights of the houses at Mzinga, the location of Tsavo East headquarters; many were seen in dung. Apparently *Platyonitis* are nocturnal burrowers in and under dung, especially elephant dung. As is now widely known, Tsavo is overpopulated with elephants, the recently estimated total numbers amounting to 30,000 on an area of 8,034 square miles. They are by far the most important dung producers in and just outside the Park, providing favourable conditions for a multitude of dung-beetles. Further papers on these are in preparation.

All the material mentioned below is kept in the Leiden museum; duplicates, however, will be sent to other institutions, including the museums in London, Paris, Berlin and Tervueren.

## Genus **Platyonitis** Janssens

*Platyonitis* Janssens, 1942, Bull. Mus. R. Hist. nat. Belgique, 18 (2): 7 (type-sp. *P. oberthuri* Janssens). Ferreira, 1962: 76 (in key); 1966: 50 (in key); 1969: 320 (in key), 386; 1973: 406 (in key), 459.

*Epionitis* Balthasar, 1942: 195 (type-sp. *E. tarsatus* Balth., by monotypy). Ferreira, 1973: 416 [but not in key, 404, 406]. **Synon. nov.**

Generic diagnosis. — Body remarkably deplanate compared to other onitine genera. Elytral sides sharply inflexed, carinate along stria 8; lateral interstria (9) not visible from above; general surface of interstria 8 horizontal; dorsal outline of elytra with subparallel sides in front; posthumeral section of elytron not emarginate. Middle and hind tarsi long and slender. Middle and hind tibiae lacking special protrusions and emarginations. Head lacking clypeal ridge, clypeofrontal ridge interrupted medially, or obsolescent entirely (in smaller specimens); clypeogenal sutures distinct; frons with median tubercle; clypeal margin raised, medially rounded, truncate or emarginate.

Pronotum simple, with the usual pair of basal impressions; base non-marginate medially. Scutellum small. Antenna (fig. 6) 9-segmented, with normal 3-lamellate club. Mouthparts, figs. 7-10. Pectoral parts lacking special features. Pygidium approximately perpendicular, its base marginate. Fore tibia of males with usual apical finger-like process (figs. 5, 12, 18), fore tibia of females (fig. 15) non-modified, in both sexes with 4 distinct external denticles; fore tarsus lacking. Parameral structure (figs. 16-17) simple.

Type-species. — *Platyonitis oberthuri* Janssens, by monotypy.

Affinities. — As Janssens himself noted this genus is close to *Kolbeellus* Jacobson, a rare monotypic genus from southern Africa. Contrary to *Platyonitis, Kolbeellus* seem to have a very poorly developed segment 3 of the labial palpi, and a reflexed pygidium.

Note. — Although Ferreira (1973: 416) reproduced Balthasar's notes (1942: 195-197) on his monotypic *Epionitis* without any comment I am quite confident that *Epionitis* is a junior synonym of *Platyonitis* and that the type-species of both are very close, if not identical (see under *P. oberthuri*).

Delimitation of species. — Specific character conditions have been inferred from the shape of femora and fore tibia (particularly in the males), shape of pronotum (anterolateral angles), colour, pilosity (e.g. of elytra), sculpture, and shape of parameres.

Distribution. — Two species known from eastern Africa.

Bionomics. — Mentioned in the introduction, second paragraph.

### Key to the species of *Platyonitis*

1. Anterolateral angle of pronotum obtuse (fig. 3b). Postero-superior edge of middle femora very obviously crenulate (fig. 19) in both sexes. Colour usually black, more

or less opaque. Male fore tibia short, distance base-basal denticle shorter than distance basal denticle - apex; inferior ridge lacking long process (fig. 18). Length 14-19 mm. — Mozambique, Kenya, presumably also Tanzania . *oberthuri* Janssens

— Anterolateral angle of pronotum acute (fig. 3a). Postero-superior edge of middle femora entire in the male (with well-developed posterodistal lobe: fig. 13), poorly crenulate in the female. Colour usually metallic, mostly cupreous or greenish, largely shiny. Male fore tibia long and slender, distances base - basal denticle - apex about equal; inferior ridge with long appendage (fig. 12). Length 13.5-21.5 mm. — Kenya, presumably also Tanzania . . . . . *smeenkorum* sp. nov.

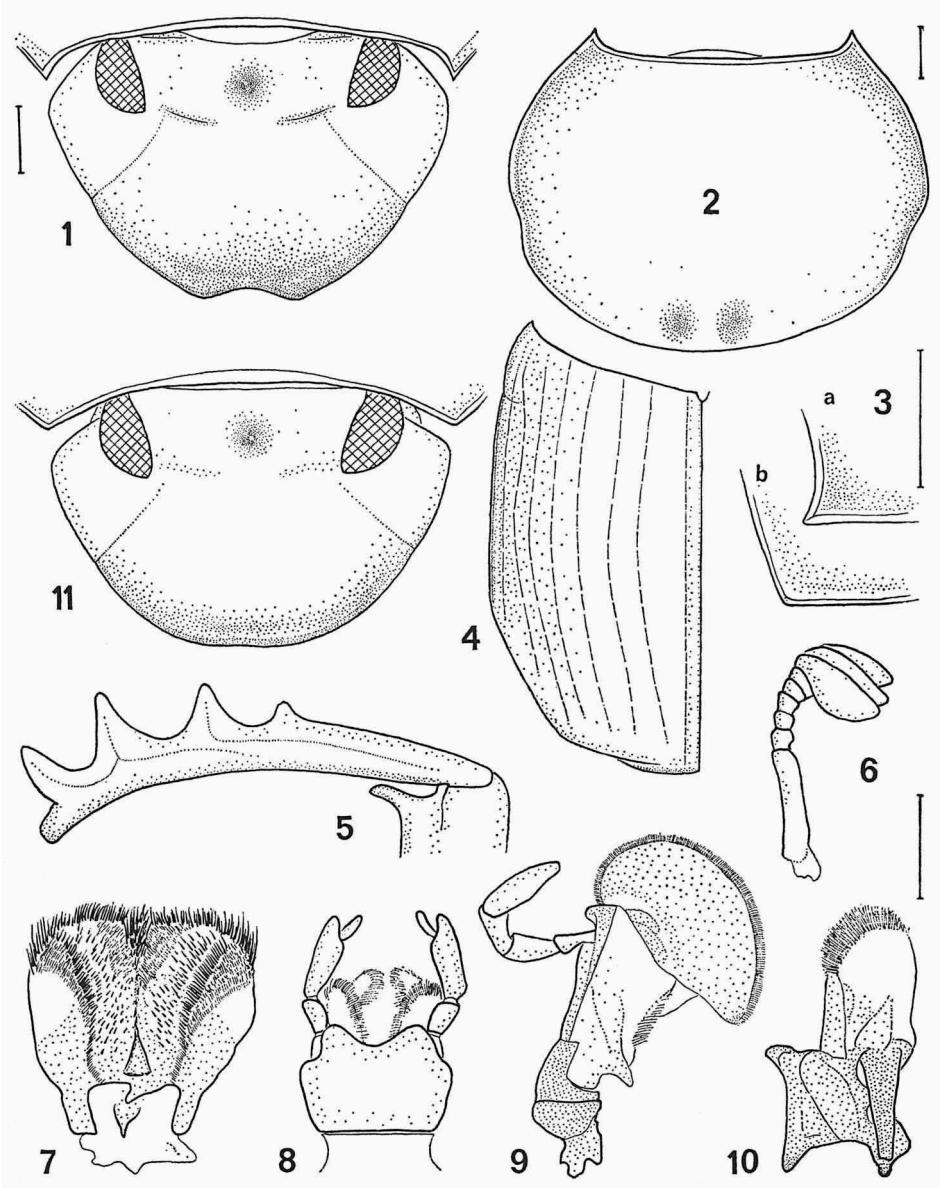
**Platyonitis smeenkorum** sp. nov. (figs. 1, 2, 3a, 4-10, 12-16, 21-22)

Holotype (male). — Approximate length 18.5, width 10, height 7 mm. Colour cupreous, shiny, dorsal side lighter than ventral side; antennal club brown; pilosity brownish. Habitus, fig. 21.

Cephalic contours and disposition of elevations, fig. 1. Cephalic border marginate, from clypeal emargination to genal tips bent upward, lined with long erect bristles; lobes bordering emargination somewhat angulate; inferior side of clypeal margin with short, outwardly curved bristles, inferior side of genal margin with series of upcurved long bristles. Entire cephalic surface with abundant punctation, punctures approximately isodiametric, quite evenly distributed, most of them with a short inconspicuous seta; diameters in front of clypeofrontal pair of ridges ca. 0.05 mm, their densities 8-13 per 0.25 sq. mm. Clypeogenal suture distinct. Maximum length of head 3.9, maximum width 5.8 mm; ratio l/w 0.67.

Pronotal contours, fig. 2. Surface of pronotum shallowly, evenly convex; margins raised, less so along base, obsolete behind basal impressions; anterolateral angles acute (fig. 3a), posterolateral angles rounded off, lateral border in front of these sinuate; median longitudinal line very feebly impressed. Pronotum densely punctate, punctures quite evenly distributed, approx. isodiametric, well-defined, each bearing a short inconspicuous stubble; diameters of primary punctures (pronotal centre) ca. 0.07 mm, their densities 20-25 per sq. mm. Median length of pronotum 7.0, maximum width 9.3 mm; ratio l/w 0.75. Scutellum small, triangular, apex rounded; surface with a number of fine hairs.

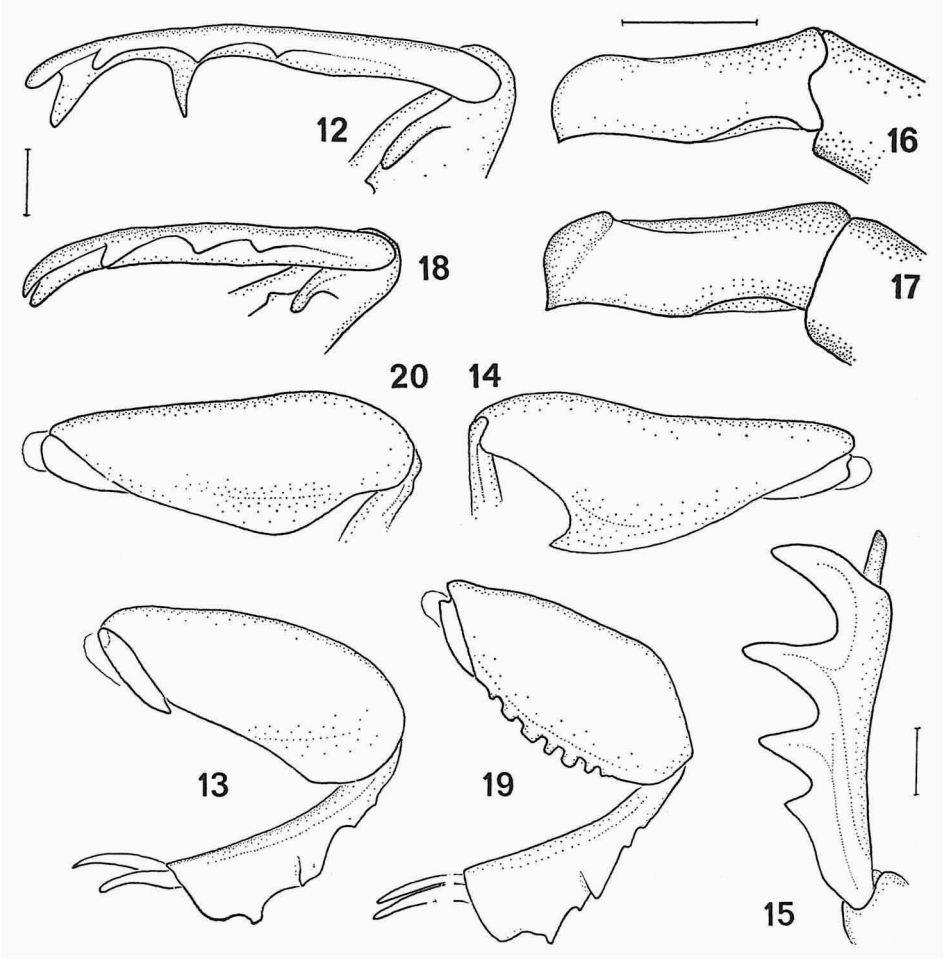
Elytral contours, scutellum, and disposition of striae, fig. 4. Base of juxtasutural interstriae depressed, humeral umbone distinct. Striae very distinctly impressed, well-defined, with shallow, ill-defined, in the lateral striae obsolescent punctures, very slightly crenulating interstrial borders; diameters of these punctures in discal striae ca. 0.07 mm, separated by 1-2 times this diameter. Interstriae feebly, variably convex, sparsely punctate, punctures small, very poorly defined, most of them with a short, inconspicuous stubble; diameters of these punctures ca. 0.03 mm, their densities on the disc 15-20 per sq.




Figs. 1, 2, 3a, 4-10, *Platyonitis smeenkorum* sp. nov. (1-5, holotype; 6-10, paratype, male). Figs. 3b, 11, *P. oberthuri* Janssens (male). Figs. 1, 11, full-face view of head; 2, dorsal outline pronotum; 3, anterolateral angle (enlarged) of *smeenkorum* (a) and *oberthuri* (b); 4, dorsal outline elytron; 5, right fore tibia, dorsal view; 6, antenna, 7, labium, 8, mentum, etc., 9, maxilla, 10, mandible, all ventral view. Scale-lines = 1 mm. 1, 5, 11: same scale; 2, 4: ditto; 6-10: ditto. Specimens all from Voi.

mm; secondary punctation (50 ×) sparse, inconspicuous, at 25 × microreticulation just distinct discally, very distinct laterally, rendering interstriae 6-8 opaque. Distal border of each elytron with a series of 40-50 long setae. Elytral median length to base of scutellum 8.2, maximum width of elytra combined 9.7 mm; ratio l/w 0.85.

Antenna and mouthparts, figs. 6-10. Mesopectus and lateral elements of metapectus distinctly microreticulate (25 ×); lateral surface of propectus more or less polished; all these parts densely covered with seta-bearing




Figs. 12-16, *Platyonitis smeenkorum* sp. nov. (12-14, holotype; 15, allotype; 16, paratype). Figs. 17-20, *P. oberthuri* Janssens (male). Figs. 12, 18, left fore tibia males, lateral view; 13, 19, middle leg, ventral; 14, 20, hind femur, ventral; 15, left fore tibia, female, dorsal. 16-17 parameres, dextrolateral. Scale-lines = 1 mm. 12-15, 18-20: same scale; 16-17: ditto. Specimens all from Voi.

punctures, setae long and slender. Metasternum also densely punctate, punctures medium-sized (disc) to small (lateral wings), approx. isodiametric, their hind border obsolescent, generally each bearing a long, slender, suberect seta; diameters of discal punctures ca. 0.05, their densities 20-25 per sq. mm. Abdominal sternites without salient features; first visible sternite laterally with a number of long setae, its microreticulation distinct (25 ×), subsequent sternites almost glabrous, with progressively less distinct microreticulation, hence abdominal surface progressively more shiny caudad. Propygidium normally not visible, without notable features. Pygidium distinctly microreticulate, opaque, with sparse, fine punctures, each bearing a short seta.

Fore legs, figs. 5, 12; tarsus absent; tibia long, with four well-developed external denticles and one apical finger-like process; opposite the emargination between denticles 2 and 3 a well-developed inferior appendage; internal border of fore tibia entire. Fore femur with anteriorly-directed anterodistal process (figs. 5, 12); antero-inferior carina extending from this process to a denticle at about one-third from apex. Posterodistal lobe of middle femur wide, fig. 13; posterodistal lobe of hind femur angulate, fig. 14. All femora abundantly set with seta-bearing punctures; secondary punctation indistinct, microreticulation distinct (50 ×). Middle and hind tibiae (fig. 13) with one complete and some additional spinose fossorial elevations; apical edge inferiorly with numerous longer and shorter bristles. Length proportions of left hind tibia and tarsal segments 1-5 100//30/12/10/7/14. Parameres of holotype not examined, but see fig. 16.

Allotype (female). — Length 18.5, width 9.5, height 8.5 mm. Habitus, fig. 22. Cephalic surface granulate, granules of clypeus transverse, anteriorly forming short rugulae, their length 0.05-0.1, width 0.05 mm, densities 14-19 per 0.25 sq. mm. Maximum length of head 3.8, maximum width 5.6 mm; ratio l/w 0.68. Pronotal punctation coarser than in male, asperate in front. Median length of pronotum 6.7, maximum width 9.0 mm; ratio l/w 0.74. Surface of elytral interstriae with shallow elongate wrinkles. Median length of elytra to base of scutellum 7.7, width of elytra combined 9.4 mm; ratio l/w 0.82. Legs, apart from feebly crenulate postero-inferior edge of middle femora, simple, without the modifications detailed in the description of the holotype; fore tibia, fig. 15. Two ultimate sternites much broader (i.e. sutures wider apart) than in male. Length proportions of left hind tibia and tarsal segments 1-5 103//30/13/11/8/13.

Variation. — Length of males 13.5-21.5, females 15.5-21 mm. Colour mostly cupreous, but frequently more or less greenish. In smaller specimens the cephalic elevations are obsolescent, in smaller males the modifications of the legs (fore tibial appendage, fore femoral elevations, etc.) are reduced.

Identification. — A most reliable feature for recognizing *Platyonitis smeenkorum* is the acute anterolateral angle of the pronotum. The important characters of the legs are sufficiently mentioned in the key. Elytral setae of *P. smeenkorum* are short, inconspicuous, normal, not swallow-tail-shaped like in sympatric *oberthuri*. Difference in parameral shape illustrated with figs. 16 and 17. The clypeal emargination is distinct in *P. smeenkorum*, and bordered by well-developed lateral lobes (in older specimens frequently abraded). The Tsavo population of *P. oberthuri* is predominantly black (brownish specimens are mostly immature), whilst *smeenkorum* are shiny metallic, mostly cupreous, frequently more or less greenish.

Distribution. — Kenya, presumably also North Tanzania.

Material examined. — 43 males, 79 females.

Holotype with locality-label reading "Museum Leiden/KENYA: Tsavo NP/Voi: Mzinga /3-XII-1972/C. Smeenk a.l.// deciduous/orthophyll/savanna". Allotype same data, but: 6-i-1972. Paratypes as follows.

Kenya : Tsavo National Park : Voi (mainly Mzinga), 3-i (1 ♂), 19-iv (5 ♂, 8 ♀), 20-iv (1 ♀), 22-iv (1 ♂), 29-iv (2 ♂, 13 ♀), 22-xii (1 ♀), all 1971, C. Smeenk, at light; 6-i (1 ♂, 6 ♀), 7-i (1 ♂, 1 ♀), 2-v (2 ♀), 4-v (8 ♂, 12 ♀), 1-xii (3 ♂, 1 ♀), 3-xii (8 ♂, 6 ♀), 4-xii (1 ♂, 1 ♀), all 1972, C. Smeenk, at light; Voi (Mzinga), 19-31-xii-1972, J. Krikken no. 45, at light (5 ♂, 8 ♀). Voi Safari Lodge, 2-i-1973, J. Krikken no. 74, at light (5 ♀). Manyani, 24-xii-1972, J. Krikken no. 54, from elephant dung (2 ♂, 5 ♀). Dida Harea, 25-xii-1972, J. Krikken no. 59, from elephant dung (2 ♂, 2 ♀). Lugard Falls Road, 26-xii-1972, J. Krikken no. 63, from elephant dung (1 ♀). Ndololo, 23-xii-1972, J. Krikken no. 64, from dung *Kobus*, riverine forest of Voi River (1 ♀). Mbololo, 29-xii-1972, J. Krikken no. 67, from elephant dung (3 ♀). Ndara, 31-xii-1972, J. Krikken no. 70, from elephant dung (1 ♂, 1 ♀) (fig. 25). Taveta (on the Kenyan-Tanzanian border, just outside the Park), 18-xi-1973, Y. Jongema (1 ♂).

Note. — This species is dedicated to the ornithologist Mr. Chris Smeenk and his wife Nellie, ardent scarab collectors in their spare time. I greatly enjoyed their hospitality during my stay in Tsavo East, December 1972-January 1973.

**Platyonitis oberthuri** Janssens (figs. 3b, 11, 17-20, 23-24)

*Platyonitis oberthuri* Janssens, 1942, Bull. Mus. R. Hist. nat. Belgique, 18 (2): 8, fig. 14 ("Manika" = Manica, Mozambique). Ferreira, 1969: 387, figs. 538-541.
*Epionitis tarsatus* Balthasar, 1942: 196, fig. 3 ("Ussambara"). Syn. nov.?

Notes. — Since Janssens' description no further material has been recorded. It is therefore quite surprising that this species and its new relative

are so common in the Tsavo National Park. One cupreous female was picked up incidentally in central Kenya.

As mentioned above (section on the genus) *Epionitis tarsatus* Balth. seems very close to this species. Several descriptive details of *E. tarsatus*, based on a single female, are strongly indicative of a synonymy, but since no information on the characteristic shape of the middle femora is given by Balthasar, I prefer to postpone my final decision on the matter. Instead of using a diacritical mark or an extra e, I have used the spelling *oberthuri*, as in the heading of Janssens' original description.

Distribution. — Mozambique (S. of the Zambesi), southeastern and central Kenya, but probably also widely, possibly locally distributed over the intervening area.

Material examined. — 19 males, 26 females.

The allotype female from Manica (Brussels museum), and the following specimens.

Kenya: Tsavo National Park: Voi (mainly Mzinga), 3-i (1 ♀), 4-i (2 ♂), 13-i (1 ♀), 27-i (7 ♂, 8 ♀), 19-iv (1 ♀), 21-iv (1 ♀), 29-iv (1 ♀), all 1971, C. Smeenk, at light; 6-i (2 ♂, 3 ♀ — male, fig. 23, length 16.5 mm; female, fig. 24, 17.5 mm), 1-xii (1 ♂, 1 ♀), 3-xii (4 ♂ — fig. 17), 4-xii (1 ♀), all 1972, C. Smeenk, at light; Voi (Mzinga), 21-22-xii-1972, J. Krikken no. 53, baited with fresh elephant dung during the night (1 ♀); 2-1-1973, J. Krikken no. 76, from rhino dung (1 ♀); 19-i-1973, J. Krikken no. 102, from elephant dung collected at night (1 ♂). Mbololo, 29-xii-1972, J. Krikken no. 67, from elephant dung (1 ♂, 1 ♀). Ndara, 31-xii-1972, J. Krikken no. 69, from elephant dung (1 ♀) (fig. 25). SW of Buffalo Wallows, 1-i-1973, J. Krikken no. 72, from elephant dung (1 ♀). Kilaguni Lodge, 4-i-1972, J. Krikken no. 84, from elephant dung (1 ♀). — Isiolo District: Samburu, 16-xi-1972, C. Smeenk, from elephant dung (1 ♀).

Approximate location and altitude of places mentioned above

| | | | | | |
|---|---|---|---|---|---|
| Buffalo Wallows | 3° | 10′ S | 38° | 35′ E | 500 m |
| Dida Harea | 3° | 35′ | 38° | 50′ | 450 |
| Kilaguni Lodge | 2° | 55′ | 38° | 04′ | 850 |
| Lugard Falls Road | 3° | 18′ | 38° | 42′ | 550 |
| Manyani | 3° | 05′ | 38° | 30′ | 550 |
| Mbololo | 3° | 12′ | 38° | 31′ | 550 |
| Ndara | 3° | 42′ | 38° | 43′ | 550 |
| Ndololo | 3° | 21′ | 38° | 39′ | 550 |
| Samburu | 0° | 33′ | 37° | 39′ | 700 |
| Taveta | 3° | 23′ | 37° | 40′ | 800 |
| Voi Mzinga | 3° | 21′ | 38° | 37′ | 600 |
| Voi Safari Lodge | 3° | 21′ | 38° | 35′ | 600 |

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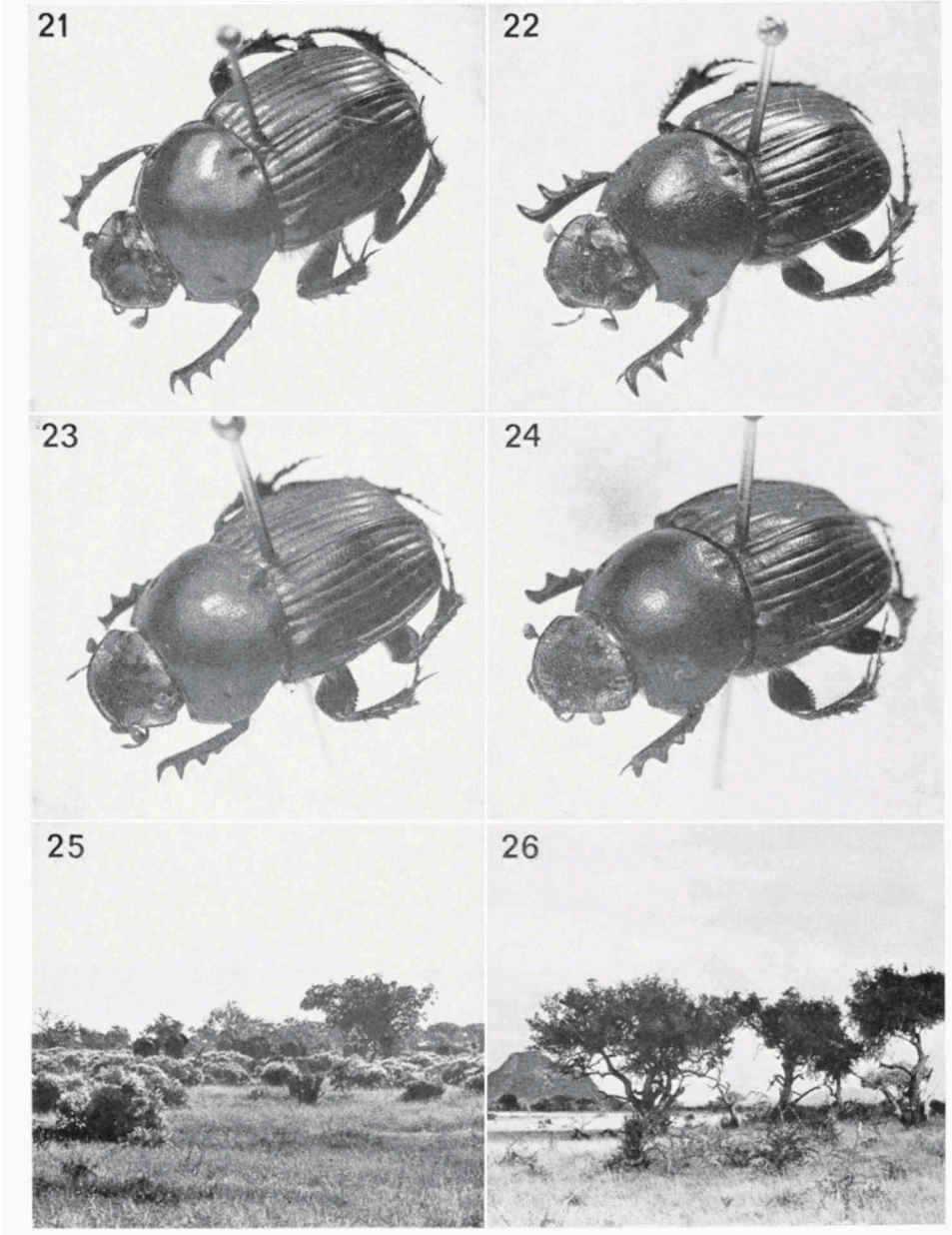


Figs. 21-22, *Platyonitis smeenkorum* sp. nov., holotype (21) and allotype (22). Figs. 23-24, *P. oberthuri* Janssens, male (23) and female (24). Figs. 25-26, landscape Tsavo National Park (East), deciduous orthophyll savanna, habitat of a rich dung-beetle fauna; 25, Ndara region, with herd of elephants in the background; 26, Irima region, open phase, due to elephant impact.