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New species and records of Afrotropical Campopleginae V. (Hymenoptera: Ichneumonidae)

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Abstract – Two new species of Afrotropical Campopleginae (Hymenoptera: Ichneumonidae) are described: *Olesicampe africana* sp. nov. from Guinea, and *Sinophorus runei* sp. nov. from South Africa, representing the first species of both genera described from the Afrotropical region, and, for the latter, the first species described from the Southern Hemisphere. Additionally, *Dusona pauliani* (Benoit, 1957), a species previously known from Réunion only, is reported for the first time from South Africa.

Key words – *Olesicampe*, *Sinophorus, Dusona*, species description, taxonomy, distribution

INTRODUCTION

In this paper, based on the Afrotropical Campopleginae (Hymenoptera: Ichneumonidae) material of the Hungarian Natural History Museum (HNHM, Budapest) and that of the Biological Museum of Lund University (MZLU, Lund), two new species of Afrotropical Campopleginae (Hymenoptera: Ichneumonidae) are described: *Olesicampe africana* sp. nov. from Guinea, and *Sinophorus runei* sp. nov. from South Africa.

Prior to this paper, no species of the genus *Olesicampe* Förster, 1869 had been known from the Afrotropical region (Yu *et al*. 2016). The single reported, ambiguous record most probably pertains to *Meloboris collector* (Thunberg, 1822) (see Townes & Townes (1973) for details). Thus, *Olesicampe africana* sp. nov. represents the first species of the genus described from the Afrotropical region.

The genus *Sinophorus* Förster, 1869 has been already known from the Afrotropical region, however by only one species, *Sinophorus xanthostomus* (Gravenhorst, 1829) (Sanborne 1984, Yu *et al*. 2016); this species is widely distributed in the Palaearctic and Oriental regions, occurring also in Saudi Arabia, which is considered as part of the Afrotropical region (Townes & Townes 1973, Sanborne 1984, Yu *et al*. 2016). Nevertheless, *Sinophorus*

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runei sp. nov. represents the first described species of the genus from the Southern Hemisphere. It is worth noting that Gauld (1984) reported the presence of *Sinophorus* in Australia, mentioning one (still) undescribed Australian species in the Townes Collection (USA). Additionally, *Dusona pauliani* (Benoit, 1957), a species previously known from Réunion only, is reported for the first time from South Africa, representing its first record from the African continent.

Ichneumonidae taxonomy and nomenclature follow Yu *et al.* (2016). Morphological terminology follows Gauld (1991) and Gauld *et al.* (1997); however, in the cases of wing veins the corresponding terminology of Townes (1969) is also indicated. Terminology of body surface sculpturing follows Harris (1979). In the case of *Sinophorus*, additional characteristics and measurements are given in the description to ensure the comparability with Sanborne (1984). However, the morphological terminology of Sanborne (1984) differs in certain cases from that of Gauld (1991) and Gauld *et al.* (1997), and even from that of Townes (1969); in these potentially confusing cases (such as the various meanings of "temple", "cheek", "gena", and "malar space" in the mentioned works) Sanborne (1984)'s terminology is not followed here but comparability and unambiguity are still ensured by the detailed and explicit descriptions, strictly using the terminology of Gauld (1991) and Gauld *et al.* (1997). The geographic delimitation of the Afrotropical region follows Townes & Townes (1973) and Yu *et al.* (2016).

Identifications were based on Schmiedeknecht (1909), Oehlke (1966), Townes (1970), Constantineanu & Voicu (1977), Gupta & Maheshwary (1977), Gauld (1984), Sanborne (1984, 1986, 1990), Horstmann (1992), Kusigemati (1993), Rousse & Villemant (2012), Sheng & Sun (2014), Sheng *et al.* (2015), Han *et al.* (2021), Vas & Di Giovanni (2021), Vas (2021), Huang *et al.* (2023), Riedel *et al.* (2023), van Noort (2024), and on re-examination of adequate type materials (at least from photos of scientific quality). The specimens were identified by the author using a Nikon SMZ645 stereoscopic microscope. Taxa are listed alphabetically. Label data are given verbatim, with additions and explanations in square brackets if necessary.

RESULTS

Dusona pauliani (Benoit, 1957)

Material examined – "S. Afr. [= Republic of South Africa], Cape Prov., Cape Peninsula, Hout Bay, Skoorsteenkop, 26.XII.[19]50, No. 95, Swedish South African Expedition 1950–1951, [P.] Brinck – [G.] Rudebeck, Insect trap", one male. "S. Afr. [= Republic of South Africa], Natal, Royal Natal National Park, 7–11.IV.[19]51, No. 271, Swedish South African Expedition 1950–1951, [P.] Brinck

– [G.] Rudebeck, Insect trap", one male. – The former specimen is deposited in the MZLU, the latter in the HNHM.

Remarks – First records from South Africa (also from continental Africa). This species has been known from Réunion.

Olesicampe africana sp. nov.
(Figs 1–2)

Type material – Holotype: female, "Guinea, Coyah, 1967.05.23., leg. K. Ferencz", specimen card-mounted, id. HNHM-HYM 155167. – Holotype is deposited in the HNHM.

Diagnosis – The new species can be identified by the following character states in combination: gena in dorsal view 0.6× as long as eye width, roundly narrowed behind eyes; clypeus wide, subtruncate; malar space 0.7× as long as basal width of mandible; lower mandibular tooth longer than upper tooth; mesopleuron granulate-punctate, speculum very finely granulate; propodeal carinae strong, except anterior transverse carina laterally (including costulae) obsolescent and posterior transverse carina medially absent; area superomedia narrow, ca. 1.5× as long as wide, posteriorly opened, mostly transversely rugose on granulate background, its lateral sides posterior to the level of costulae subparallel to slightly convergent; hind femur ca. 4.5× as long as high; second tergite 1.2× as long as its apical width; ovipositor sheath 1.5× as long as apical depth of metasoma, ovipositor conspicuously strong; tegula pale yellow; metasoma predominantly reddish brown; fore and middle coxae yellowish, hind coxa black; hind femur and tibia orange-brown, the latter subbasally and apically slightly darkened but without forming a strong banded pattern; small species (body length ca. 3.5 mm).

Description – Female (Figs 1–2). Body length ca. 3.5 mm, fore wing length ca. 3 mm.

Head: Antenna with 25 flagellomeres; first flagellomere 3.3× as long as its apical width; preapical flagellomeres slightly longer than wide. Head transverse, matt, granulate, with very fine rugulosity on face; hairs dense and moderately short. Ocular-ocellar distance 1.3× as long as ocellus diameter, distance between lateral ocelli 1.1× as long as ocellus diameter. Inner eye orbits barely indented, parallel. Gena in dorsal view 0.6× as long as eye width, roundly narrowed behind eyes. Occipital carina complete, reaching hypostomal carina before base of mandible. Frons flat, slightly impressed above toruli, without median longitudinal carina. Face and clypeus almost flat in profile; clypeus very weakly separated from face, rather wide, its apical margin subtruncate, sharp. Malar space 0.7× as long as basal width of mandible. Lower margin of mandible with distinct flange from base towards teeth, flange obliquely narrowed before teeth; lower mandibular tooth distinctly longer than upper tooth.

Mesosoma: Mesosoma matt, granulate with dense but fine punctures, and with dense, moderately short hairs. Pronotum with rather weak wrinkles on ventral half, epomia barely discernible. Mesoscutum about as long as wide, convex in profile; notaulus indistinct. Scuto-scutellar groove wide and deep. Scutellum convex in profile, lateral carina not developed. Mesopleuron granulate-punctate with rather weak oblique wrinkles above and anterior to speculum; speculum very finely granulate, somewhat less matt than other parts of mesopleuron. Epicnemial carina distinct, pleural part bent to anterior margin of mesopleuron reaching it little above its middle height, transversal part (i.e., the part at the level of sternaulus running through the epicnemium to the ventral edge of pronotum) not developed, ventral part (behind fore coxae) complete, not elevated. Sternaulus indistinct. Posterior transverse carina of mesosternum complete, slightly elevated, medially not excised. Metanotum 0.4× as long as scutellum. Metapleuron without juxtacoxal carina; submetapleural carina complete, elevated. Pleural carina of propodeum strong; propodeal spiracle small, subcircular, separated from pleural carina by about its length, connected to pleural carina by a distinct ridge. Propodeum granulate with transverse to irregular rugosity, convex in profile, relatively short. Lateromedian and lateral longitudinal carinae complete and strong. Anterior transverse carina only medially strong, laterally (including costulae) obsolescent. Posterior transverse carina medially absent, laterally strong. Area basalis small, rather narrowly trapezoid, almost triangular. Area superomedia about pentagonal, relatively narrow, ca. 1.5× as long as wide, posteriorly opened, mostly transversely rugose on granulate background, its lateral sides posterior to the level of costulae subparallel to slightly convergent. Area petiolaris relatively narrow, posteriorly moderately divergent, confluent with area superomedia, their junction weakly discernible, posteriorly weakly impressed, mostly irregularly rugose on granulate background. Fore wing with petiolate, quadrate, oblique areolet, 3*rs-m* present, second recurrent vein (2*m-cu*) distinctly distal to middle of areolet; distal abscissa of *Rs* straight; nervulus (*cu-a*) postfurcal by about its width, inclivous; postnervulus (abscissa of *Cu*1 between 1*m-cu* and *Cu*1a + *Cu*1b) intercepted at about its middle by *Cu*1a; lower external angle of second discal cell almost right-angled. Hind wing with nervellus (*cu-a* + abscissa of *Cu*1 between *M* and *cu-a*) slightly reclivous, not intercepted by discoidella (*Cu*1); discoidella spectral, proximally not connected to nervellus. Coxae finely granulate. Hind femur 4.5× as long as high. Inner spur of hind tibia ca. 0.6× as long as first tarsomere of hind tarsus. Tarsal claws small, short, about as long as arolium, with strong pectines.

Metasoma: Metasoma relatively short, moderately compressed, finely granulate to shagreened, with dense, short hairs. First tergite slender, 2.7× as long as width of its apical margin, 1.3× as long as second tergite, glymma small and shallow, dorsomedian carina of first tergite weak. Second tergite 1.2× as long as its apical width; thyridium oval, its distance from basal margin of tergite

about as long as its length, connected to basal margin of tergite by a weak groove. Posterior margin of seventh tergite medially deeply, narrowly excised. Ovipositor sheath conspicuously long (as compared to most species of *Olesicampe*), 1.5× as long as apical depth of metasoma, almost as long as first tergite; ovipositor conspicuously strong, compressed, weakly and evenly upcurved, dorsal preapical notch distinct.

Colour: Antenna brown, except scapus and pedicellus ventrally yellowish. Head black, palpi and mandible yellowish, mandibular teeth brownish. Mesosoma black, tegula pale yellow. Metasoma reddish brown, except first tergite almost entirely, second and third tergites basally blackish, and following tergites dorsomedially more or less infuscate. Wings hyaline, wing veins and pterostigma brown. Fore and middle legs: coxae, trochanters and trochantelli yellowish; femora, tibiae and tarsi orange, apical tarsomeres more or less brownish. Hind leg: coxa black; trochanter and trochantellus yellowish; femur orange-brown; tibia orange-brown, subbasally and apically slightly darkened but without forming a strong banded pattern; tarsus brown.

Male: Unknown.

Distribution – Guinea.

Etymology – The specific epithet *africana* is the feminine form of the Latin adjective *africanus, -a, -um*, meaning African, emphasising that it is the first species of *Olesicampe* described from the Afrotropical region.

Remarks on generic placement – The new species matches with the current generic characteristics and delimitation of *Olesicampe* (Townes 1970, Huang *et al*. 2023). The relatively long ovipositor of the new species represents a quite rare but not unique characteristic among members of this genus; it is within the known variation that species of *Olesicampe* exhibit (ovipositor sheath is usually about as long as apical depth of metasoma, rarely distinctly shorter or up to 1.5× longer) (Townes 1970, Huang *et al*. 2023).

Remarks on identification – The new species, with the combined characteristics of its conspicuously long and strong ovipositor, pattern of propodeal carination, colouration, and small size, cannot be confused with any congeneric species; it can be unambiguously identified by character states given in Diagnosis.

***Sinophorus runei* sp. nov.**
(Figs 3–4)

Type material – Holotype: female, "S. Afr. [= Republic of South Africa], Cape Prov., Cape Peninsula, Hout Bay, Skoorsteenkop, 26.XII.[19]50, No. 95, Swedish South African Expedition 1950–1951, [P.] Brinck – [G.] Rudebeck, Insect trap", specimen pinned, id. MZLU 207001. Paratypes: female, same label data,

specimen pinned, id. HNHM-HYM 155177 (originally MZLU 207003); female, same locality and collectors but 22.I.[19]51, No. 157, specimen pinned, id. MZLU 207002. – Holotype and one paratype are deposited in the MZLU, one paratype is deposited in the HNHM.

Diagnosis – The new species can be identified by the following character states in combination: head broadly triangular, densely punctate; gena 0.5× as long as eye width, roundly narrowed behind eyes; mesopleuron densely punctate-granulate, speculum smooth; propodeum rugose-punctate, its posterior two-thirds deeply, widely impressed, with strong, transverse rugae; propodeal carinae complete, except posterior transverse carina medially absent; area superomedia hexagonal, ca. 0.6–0.7× as long as wide, ca. 0.6× as wide as area petiolaris; nervellus intercepted by discoidella; hind femur 4.5–4.6× as long as high; first tergite with distinctly impressed lateral groove; ovipositor sheath 1.1× as long as hind tibia; ovipositor weakly upcurved, not tapering; tegula pale yellow; metasoma predominantly reddish; legs, including coxae, reddish orange, hind tibia without banded pattern.

Description – Female (Figs 3–4). Body length ca. 8 mm, fore wing length ca. 6 mm.

Head: Antenna with 35–36 flagellomeres; first flagellomere almost 4× as long as its apical width; preapical flagellomeres longer than wide. Head transverse, broadly triangular (in frontal view, width of head at the level of toruli 2× as long as combined length of face and clypeus), matt, granulate and rather densely punctate; hairs dense and moderately short, on clypeus somewhat longer. Ocular-ocellar distance 0.6–0.7× as long as ocellus diameter, distance between lateral ocelli 1.7–1.9× as long as ocellus diameter. Inner eye orbits very weakly indented, about parallel. Gena in dorsal view 0.5× as long as eye width, strongly, roundly narrowed behind eyes; gena in lateral view 0.5× as long as eye width. Occipital carina complete, reaching hypostomal carina before base of mandible; hypostomal carina slightly elevated. Frons flat, slightly impressed above toruli, without median longitudinal carina. Face almost flat in profile, very weakly separated from clypeus. Clypeus weakly convex in profile, moderately wide, its apical margin convex, sharp. Malar space 0.5–0.6× as long as basal width of mandible; distance between the middle of lower margin of eye and lower portion of gena at ventral margin of mandible 1.1–1.2× as long as basal width of mandible. Lower margin of mandible with distinct flange from base towards teeth, flange obliquely narrowed before teeth; mandibular teeth subequal, upper mandibular tooth slightly longer than lower tooth. Mouthparts not produced ventrad; palpi normal, not modified.

Mesosoma: Mesosoma matt, granulate, distinctly and densely punctate, and with dense, short hairs. Pronotum with distinct, transverse wrinkles on ventral half, epomia strong. Mesoscutum slightly longer than wide, convex in profile; notaulus indistinct. Scuto-scutellar groove wide and deep. Scutellum convex in profile, lateral carina not developed. Mesopleuron densely punctate

on granulate background (distances between punctures distinctly shorter than puncture diameters), and with distinct oblique wrinkles above and anterior to speculum; speculum large, smooth, shiny. Epicnemial carina strong, pleural part bent to anterior margin of mesopleuron reaching it at about its middle height, transversal part (i.e., the part at the level of sternaulus running through the epicnemium to the ventral edge of pronotum) not developed, ventral part (behind fore coxae) complete, strong but not elevated. Sternaulus indistinct. Posterior transverse carina of mesosternum complete, slightly elevated, medially not excised. Metanotum 0.4× as long as scutellum. Metapleuron without juxtacoxal carina; submetapleural carina complete, elevated. Pleural carina of propodeum strong; propodeal spiracle oval, separated from pleural carina by about its length, connected to pleural carina by a distinct ridge. Propodeum relatively short, weakly convex in profile, rugose-punctate, its posterior two-thirds medially deeply, widely impressed, in the midline with strong, dense, transverse rugae. Lateromedian and lateral longitudinal carinae complete, median section of the latter more or less weakened but discernible. Anterior transverse carina, including costulae, complete and strong. Posterior transverse carina medially absent, laterally strong. Area basalis trapezoid, 0.6× as long as its anterior width. Area superomedia hexagonal, ca. 0.6–0.7× as long as wide, its maximum width ca. 0.35× as long as distance between propodeal spiracles and ca. 0.6× as long as maximum width of area petiolaris, posteriorly opened, its lateral sides posterior to costulae subparallel to divergent. Area petiolaris moderately wide, its maximum width 1.6–1.7× as long as that of area superomedia, confluent with area superomedia, their junction discernible, medially deeply impressed. Fore wing with relatively small, petiolate, quadrate, oblique areolet, 3*rs-m* present, second recurrent vein (2*m-cu*) slightly distal to middle of areolet; distal abscissa of *Rs* almost straight; nervulus (*cu-a*) interstitial, slightly inclivous; postnervulus (abscissa of *Cu*1 between 1*m-cu* and *Cu*1a + *Cu*1b) intercepted slightly below its middle by *Cu*1a; lower external angle of second discal cell moderately acute. Hind wing with nervellus (*cu-a* + abscissa of *Cu*1 between *M* and *cu-a*) slightly inclivous, weakly broken, intercepted by discoidella (*Cu*1) near its posterior end; discoidella spectral, proximally connected to nervellus. Coxae granulate-punctate. Hind femur 4.5–4.6× as long as high. Inner spur of hind tibia 0.5–0.6× as long as first tarsomere of hind tarsus. Tarsal claws relatively small, slightly longer than arolium (ca. 1.5× as long as basal, sclerotised part of arolium), their basal halves distinctly pectinate.

Metasoma: Metasoma moderately compressed, very finely granulate to shagreened, with dense, short hairs. First tergite slender, 2.8–2.9× as long as its posterior width, 1.2–1.3× as long as second tergite, lateral groove distinctly impressed; petiole ca. 1.6× as long as postpetiole, dorsal surface of postpetiole sparsely pubescent. Suture separating first tergite from first sternite situated little below mid-height at basal third of first metasomal segment. Second tergite 1.4× as long as its apical width; thyridium small, oval, its distance from basal

margin of tergite ca. 1.5× as long as its length, connected to basal margin of tergite by an indistinct, weak groove. Posterior margin of seventh tergite medially slightly concave, not excised. Ovipositor sheath 1.1× as long as hind tibia, 1.3–1.4× as long as hind femur. Ovipositor weakly upcurved, compressed, not tapering, its depth about equal to depth of first tarsomere of hind tarsus (measured at midline, in profile); dorsal preapical notch distinct, v-shaped, length of tip (i.e., length of dorsal valve posterior to preapical notch) 1.2–1.3× as long as length of fifth tarsomere of hind tarsus (excluding claws), ventral swelling of tip indistinct.

Colour: Antenna, including scapus and pedicellus, blackish to brown. Head black, palpi yellowish, mandible orange, mandibular teeth brown. Mesosoma black, tegula pale yellow. First tergite of metasoma predominantly black, apically reddish, following tergites reddish except second and third tergites basally more or less blackish. Wings hyaline, wing veins and pterostigma brown. Fore and middle legs, including coxae, reddish orange, apical tarsomeres more or less darkened. Hind leg: coxa reddish orange; trochanter and trochantellus predominantly brownish; femur reddish orange; tibia entirely reddish orange to orange-brown, without any traces of banded pattern; tarsus brownish.

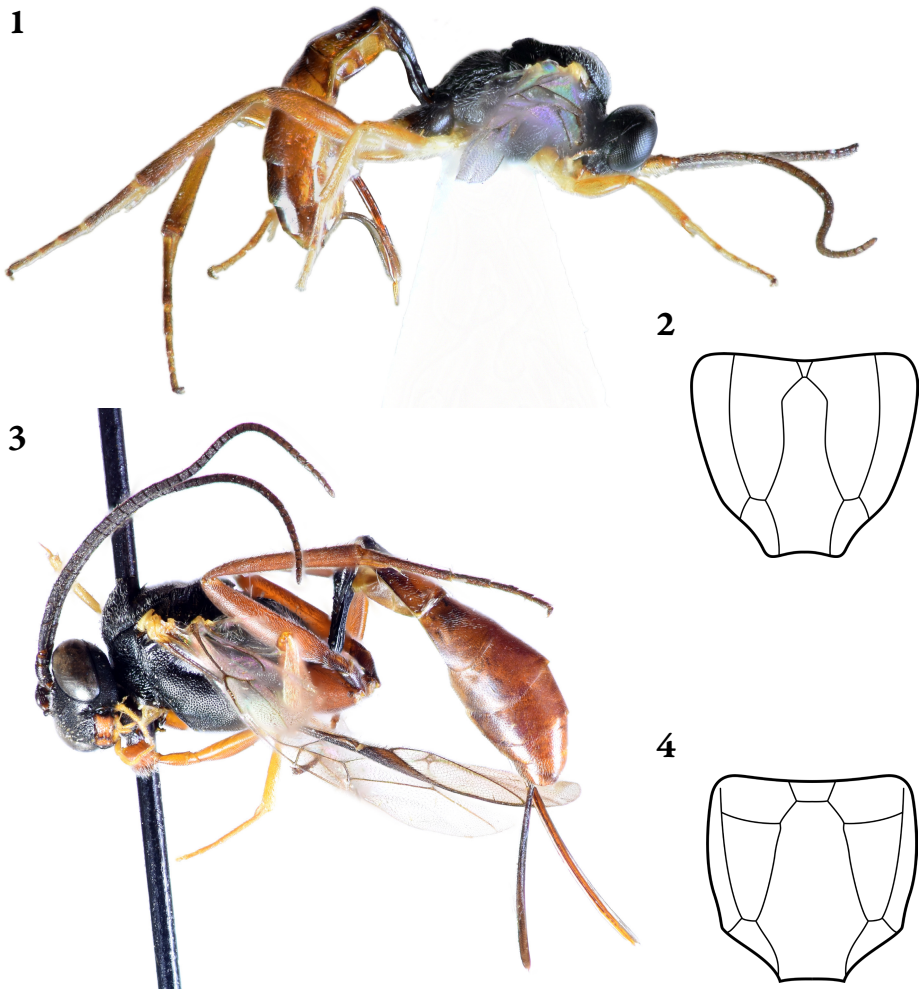
Male: Unknown.

Distribution – South Africa.

Etymology – The new species is dedicated to Rune Bygebjerg, Swedish entomologist, to whom I thank the invaluable possibility to work on the Campopleginae material of the MZLU.

Remarks on generic placement – The new species matches perfectly with the current generic characteristics and delimitation of *Sinophorus* (Townes 1970, Sanborne 1984).

Remarks on identification – The characteristic of the entirely reddish orange ["ferruginous" in terms of Sanborne (1984)] hind coxae of the new species is shared with only two other species of the genus: *Sinophorus ruficoxa* Sanborne, 1984 and *Sinophorus katoensis* Sanborne, 1986, a Nearctic and an Eastern Palaearctic species, respectively. These species cannot be confused with the new species, as *Sinophorus ruficoxa* has entirely black metasoma and distinctly black-ferruginous banded hind tibia, while *Sinophorus katoensis* has predominantly black metasoma (tergites 1–3 often reddish) and black-white banded hind tibia. By using the identification key of *Sinophorus* species of the Old World in Sanborne (1984), the new species keys out with *Sinophorus xanthostomus*; this species can be readily distinguished from the new species by its entirely black metasoma and hind coxa.



Figs 1–4. Habitus and propodeal carination of holotypes, 1–2 = *Olesicampe africana* sp. nov., 3–4 = *Sinophorus runei* sp. nov. (photos by Zoltán Vas, drawings by Viktória Szőke)

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