

## STUDIES ON CICINDELIDS

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# Monitore Zoologico Italiano

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PUBBLICATO DALLA UNIVERSITÀ DEGLI STUDI DI FIRENZE  
CON IL CONTRIBUTO DEL CONSIGLIO NAZIONALE DELLE RICERCHE

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### STUDIES ON CICINDELIDS.

#### 13. A CONTRIBUTION TO THE KNOWLEDGE OF THE CICINDELIDAE OF SOUTH WEST AFRICA (COLEOPTERA CICINDELIDAE)

(PUBBLICAZIONI DEL CENTRO DI STUDIO  
PER LA FAUNISTICA ED ECOLOGIA TROPICALI DEL C.N.R.: XCVIII)

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South West Africa (Namibia) (Fig. 1) is one of the most interesting and at the same time one of the least known faunistic areas of the African continent. This arid, desolate, immense region, very sparsely populated (less than 700,000 inhabitants in 1966, in an area of over 800,000 km<sup>2</sup>) lies along the atlantic coast South of Angola from the Kunene River southwards to the Orange River. It includes the most conspicuous part of the only true desert of the African southern hemisphere, namely the Namib Desert, a foggy coastal desert which constitutes the extreme component of the arid Kalahari-Karroos-Namaqualand phytogeographical system.

The ancient development of desert phenomena, especially due to cold oceanic currents, and the long undisturbed duration of desert conditions and of its special biota (dating back to the Cretaceous period, according to geological evidence: KAISER, 1926), made the Namib a privileged area from a biogeographical point of view, with a striking richness of the specific composition, an high degree of endemism, and lots of specialized highly-differentiated elements. It can be instanced for example the case of the universally known *Welwitschia mirabilis* Hook., among plants or, with regard to the animal life, the astonishing Tenebrionid fauna, extraordinarily rich in evolved, desert-adapted species, brought to light by the papers of GEBIEN (1938) and KOCK (1961, 1962). For some general information on the Namib Desert and its main characteristic traits, I refer the two papers by KOCK mentioned above and those of STENGEL (1964,

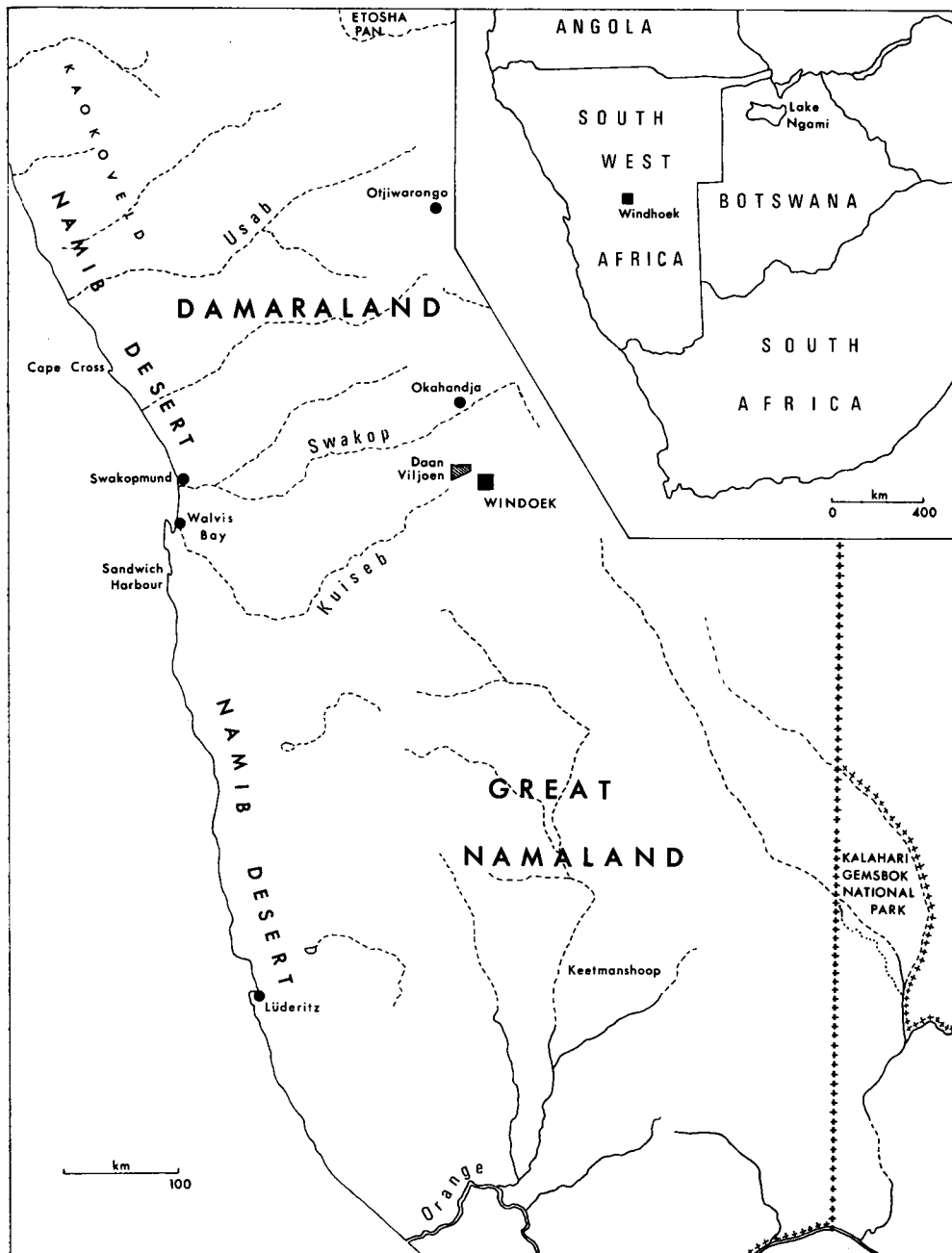


Fig. 1. — Map of the visited area.

1966), LOGAN (1960), KÜHNELT (1965) and GIESS (1962, 1968). STEWARD (1963) can be usefully consulted for some political, social and historical data on South West Africa.

Regarding the Cicindelid fauna, Namibia also offers a number of interesting things. Unfortunately our knowledge of the tiger beetles population is reduced to a few incidental, partial and very old collections made in far-off times and never followed by further more specialized and accurate explorations. As far as I know, our entire knowledge of South West Africa Cicindelidae is based, in addition to the general works of PÉRINGUEY (1892) and HORN (1926), on a few scattered papers, especially on those of BARKER (1919, 1920) and on a brief note published by HORN in 1908 with regard to materials collected by L. Schultze during his trip of 1903-1905. In more recent times, some casual and occasional collections of Cicindelids were made — during 1939, 1951 and 1956 — by the Swedish biologists F. Gaerdes, P. Brinck and G. Rudebeck of the Lund University. The few specimens of tiger beetles were studied by BASILEWSKY (1958).

The Cicindelid material that my father, Avv. Mario Cassola, collected during a recent entomological journey to South West Africa (December 1972-January 1973), therefore constitute an important contribution to the knowledge of the Cicindelidae of this poorly visited country, all the more so as his researches were essentially directed toward the collection of the species belonging to this family. This was consequently the first specialized research ever made in South West Africa. In spite of the small number of species — due to the impossibility of using some more suitable hunting methods — the collected material constitutes first-rate documentary evidence, both for the accuracy of the researches and for the number of specimens collected (more than 250, belonging to six different species), of the presence and the frequency of Cicindelids in the area visited, and consequently, of the main features of their population.

I am much indebted firstly to my father, who made these interesting collections with perseverance and genuine passion, in sometimes quite difficult environmental conditions. Thanks are also due to Dr EMILE RIVALIER (Meudon, France) who assisted in solving some of the problems and personally controlled, with his usual kindness, some of my identifications.

#### LIST OF SPECIES

*Myriochile* (s.str.) *melancholica* (Fabricius, 1798).

*Cicindela melancholica* FABRICIUS, 1798, Ent. Syst. Suppl., p. 63.

*Myriochile aegyptiaca*; MOTSCHOUJSKY, 1862, Etud. Ent., XI, p. 22.

*Cicindela melancholica*; PÉRINGUEY, 1892, Trans. S. Afr. phil. Soc., 47.

*Cicindeia melancholica*; HORN, 1926, in: Junk, Col. Cat., 86, p. 138.

*Myriochile melancholica*; RIVALIER, 1950, Rev. fr. Ent., p. 234.

*Finding localities*: Walvis Bay (Namib Desert) (Figs 2, 3), 24.XII.72, 3 ♂♂ 2 ♀♀; Walvis Bay, 26.XII.72, 1 ♂ 2 ♀♀; Windhoek, Daan Viljoen Park, 30.XII.72, 3 ♂♂ 4 ♀♀.

*Remarks*: this is perhaps the most widely distributed tiger beetle of the world, ranging from southern Europe to India and the whole African continent, Madagascar included. Through all its enormous range the species changes very little however and it is always difficult to guess its provenance if not properly labelled. The specimens collected by my father in South West Africa, Natal and Mozambique appear to be very dark, almost completely black, much different consequently from other African individuals (coming from Tchad, Senegal and Ghana) that I have in my own collection. Unfortunately I have insufficient material to judge whether this character has subspecific value or not.

*M. melancholica* has also been collected at Walvis Bay by F. Gaerdes (BASILEWSKY, 1958). The specimen named by BOHEMAN (1860, p. 6, Öfvers. K. Vetensk Akad. Förh.) with the synonym *tantilla* Boh. (HORN, 1908) probably came from « Swakop » or, according to PÉRINGUEY (1892) from Lake Ngami (Botswana).

### *Lophyra* (s.str.) *reliqua* (Barker, 1920).

*Cicindela reliqua* BARKER, 1920, Ann. Durban Mus., p. 279.

*Cicindela obliquo-graciliaenea reliqua*; BARKER, 1920, Ann. Durban Mus., p. 285.

*Cicindela brevicollis obliquo-graciliaenea*; HORN, 1926, in: Junk, Col. Cat., 86, p. 147.

*Lophyra reliqua*; RIVALIER, 1948, Rev. fr. Ent., p. 57.

*Finding localities*: Walvis Bay (Namib Desert) (Figs 2, 3), 24.XII.72, 1 ♂; Okahandja, Swakop River, 29.XII.72, 19 ♂♂ 8 ♀♀; 5.I.73, 12 ♂♂ 7 ♀♀.

*Remarks*: for a general discussion of this species I refer to another recent paper (CASSOLA, 1975) based on materials coming from Natal. I add here that the numerous examples of *reliqua* collected in South West Africa do not show appreciable differences. This species is always easily recognizable by its dark bronze elytral coloration, appearing quite black except in strong light, and by having a somewhat dense narrow fringe of white decumbent hairs concentrated along the lateral margins of the pronotum. Elytral markings are also peculiar, showing a downward curved, more diagonal and a less elbowed middle band. The characteristic feature of the pubescence of pronotum, emphasized by BARKER (1920) in his original description, seems especially useful to distinguish *reliqua* even from *obliquo-graciliaenea* W. Horn, a very similar species that RIVALIER (1948) regarded simply as a synonym, but in which the above

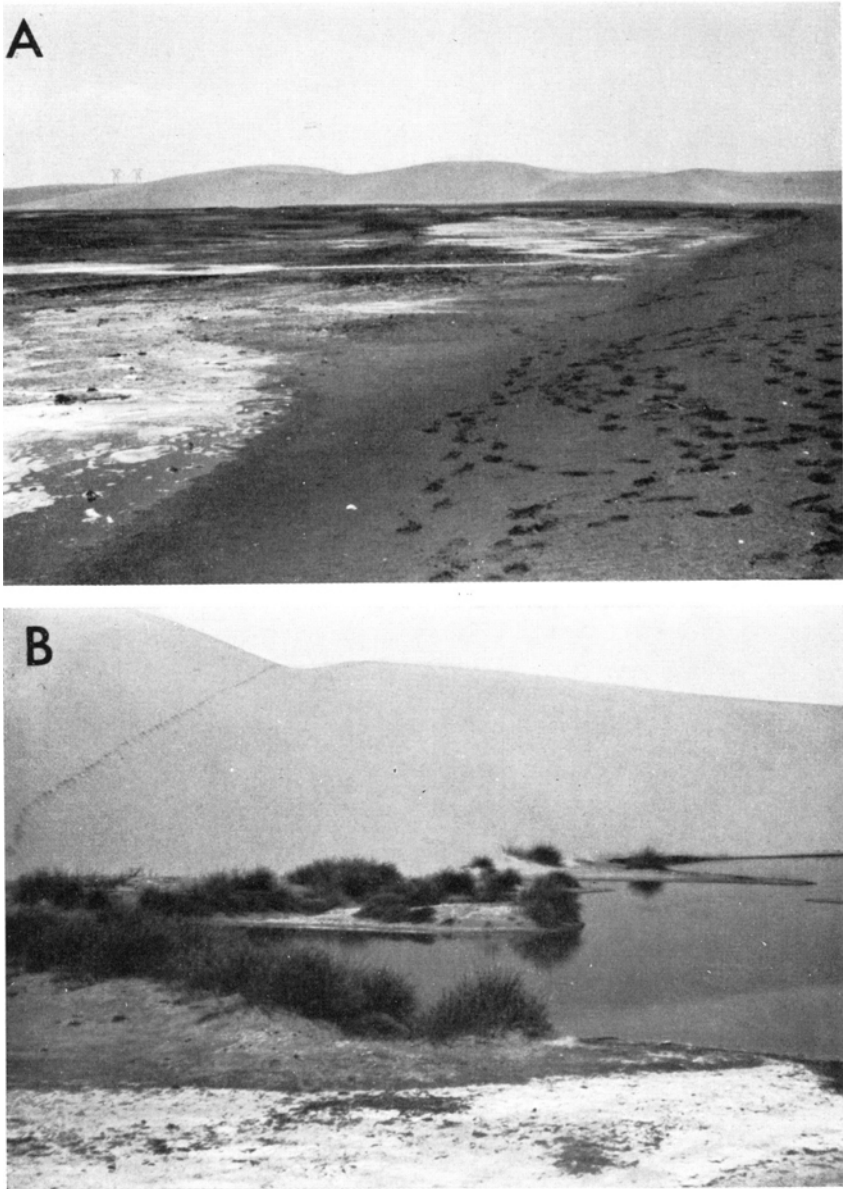


Fig. 2. — A, B: a salt lake 3 miles Est of Walvis Bay, with the great sand dunes of Namib Desert in background. In this habitat *Lophyra* (s.str.) *damara* (Pér.), *Habrodera nilotica* (Dej.) and *Eurymorpha cyanipes* Hope were abundantly present.



Fig. 3. — A, B: two other views of the salt lake 3 miles Est of Walvis Bay, showing some aspects of its spectacular wildlife: Flamingos (A) and White Pelicans (B).

mentioned character (I have in my own collection a long series of specimens coming from the Congo) appears to be much less evident. To definitively clarify the effective relationship between these two species it would be necessary, however, to make an attentive study of many specimens coming from various regions of their extensive range. Unfortunately this is at present impossible.

The taxonomic situation being still a little muddled, some records of *reliqua* possibly need a revision, and the respective range of the two forms will be subject to some alterations. According to entomological literature *reliqua* was recorded from Natal, Transvaal, Rhodesia, Orange and Angola (HORN, 1926; RIVALIER, 1948, BASILEWSKY, 1955; FERREIRA, 1965). This seems therefore to be the first record for South West Africa.

*Lophyra* (s.str.) *herero* (Péringuey, 1892) (Figs 4, 5).

*Cicindela candida* var. *herero* PÉRINGUEY, 1892, Trans. S. Afr. phil. Soc., p. 34.

*Cicindela candida herero*; HORN, 1905, Dt. ent. Z., p. 43.

*Cicindela herero*; BARKER, 1920, Ann. Durban Mus., p. 284.

*Cicindela brevicollis herero*; HORN, 1920, Ark. Zool., p. 11.

*Lophyra neglecta herero*; RIVALIER, 1948, Rev. fr. Ent., p. 73.

*Lophyra herero*; RIVALIER, 1957, Rev. fr. Ent., p. 327.

*Finding locality*: Okahandja, Swakop River, 29.XII.72, 3 ♂♂ 1 ♀; 5.I.73, 6 ♂♂ 6 ♀♀.

*Remarks*: PÉRINGUEY (1892) described *herero* as a var. of *candida* Dejean, on the basis maybe of a single specimen coming from « Damara-land ». The author did not indicate however the number of specimens nor their sex (1). The original description, even if not very accurate, immediately emphasized the peculiar characters of this species, and especially the elytral ground colour, greenish bronze with coppery reflections, the large white markings and the elytra considerably amplified

(1) The type of *herero* constitutes a little puzzle not easily solved. HORN (1920) related to have seen a ♂, in the PÉRINGUEY's collection, with the author's handwritten label saying « mon type », and a ♀ of the Stockholm Museum also coming from the PÉRINGUEY's materials. Both these specimens were labelled « Damara, de Vylder ». According to HORN, who relates comparing them with many other specimens, PÉRINGUEY's ♂ should not belong to *herero* but should be simply a specimen of *fasciculicornis* Barker with an unusually broader elytral maculation! The ♀ appeared on the contrary to agree far better with PÉRINGUEY's description.

On account of the rather confuse ideas that HORN showed with regard to South Africa *Lophyra*, I do not know how much attention to pay to HORN's above mentioned statements. If the ♂ belongs really to *fasciculicornis* it should be necessary to suppose an erroneous exchange of locality labels, and the true type of *herero* should be in this case the ♀. On the other hand, if PÉRINGUEY could see only one specimen, I am inclined to believe that it was much more likely to be a ♀, both because the type of *herero*, as PÉRINGUEY stated, had been communicated to him by Professor C. Aurivillius of the Stockholm Museum, and especially because one of the characters used for its description was the elytral ampliation which is a character proper only to ♀♀.



about middle (this last character proper to ♀♀). PÉRINGUEY nevertheless seemed to be unable to properly distinguish *herero* from *clathrata*, from which, according to him, it would be nigh impossible to distinguish, were it not for the peculiar shape of the elytra.

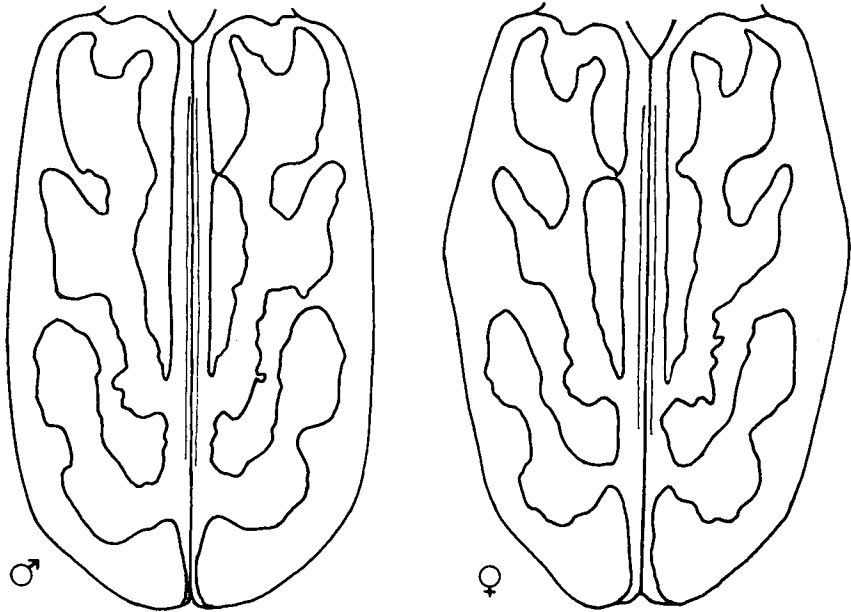


Fig. 4. — *Lophyra* (s. str.) *herero* (Pér.): elytral shape and maculation.

HORN also (1905, 1908), who saw one specimen collected by L. Schultze just at Okahandja, stated that *herero* as a race of *candida*, as did BARKER (1919) with regard to four specimens (2 ♂♂, 2 ♀♀), also coming from Okahandja, for which the attribution to *herero* and the statement of this form as a subspecies of *candida* were nevertheless made only doubtfully and principally on the HORN'S word. In this paper BARKER correctly pointed out that in his specimens the females were much more amplified medially, while *candida* shows but little differences in the shape of the sexes. After having given a new description of *herero* more accurate than the PÉRINGUEY'S, BARKER described, by the name of *braunsi*, a very similar form, a little more elongate and with narrower elytral markings (some 12 specimens were studied), coming from Willowmore, Cape Province, nearly a 1,000 miles South of Okahandja.

In a later paper (1920), after having examined the type of PÉRINGUEY (for which he also forgot to indicate the sex!), BARKER could confirm

his previous attribution to *herero* of the Okahandja specimens and recognized it as a full species, taxonomically placed between *candida* and *differens* in a special section A of his key to South African species. The

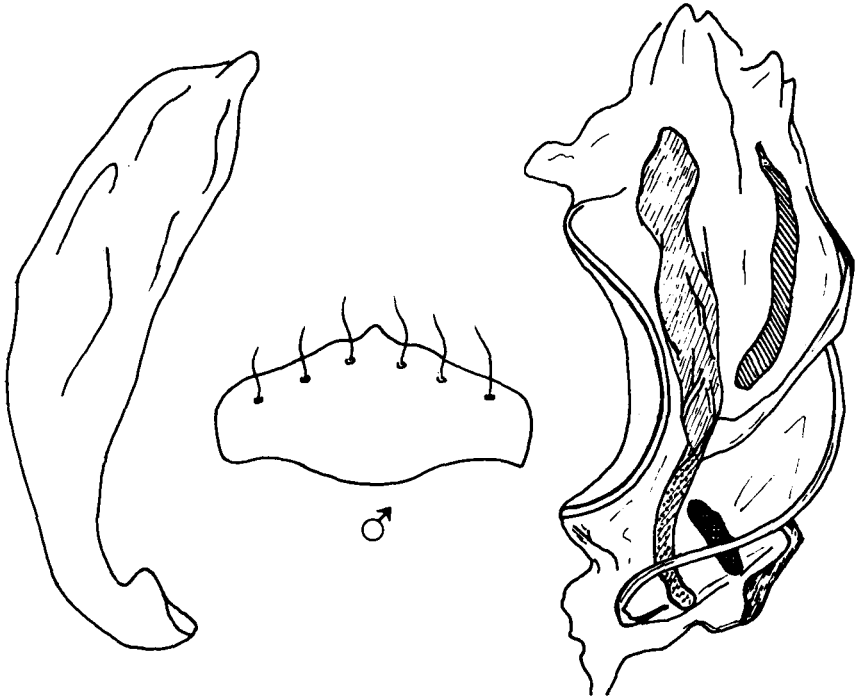


Fig. 5. — *Lophyra* (s. str.) *herero* (Pér.): aedeagus (dorsal aspect), labrum and inner sac of aedeagus (from left to right).

British entomologist did not specify the true reasons for his new statement, but he had given them in advance in his previous paper, saying: « I have not thought it advisable, at present, to interfere with Dr. Horn's apportionment of subspecific rank to *herero* as a race of *candida* and to *intermedia* as a race of *brevicollis*, but in my opinion both these forms are distinct species ».

During the same year, in a paper that far from clarifying the puzzling systematics of South African *Lophyra* has been one of the chief sources of errors and misunderstandings, HORN (1920) declared that he shared BARKER's opinion about the doubtfulness of the *herero-candida* conspecificity, but ended by considering *herero* as a subspecies of *brevicollis* Wiedemann, rather than of *candida*! HORN consequently made *brevicollis*

a chaotic and incomprehensible specific complex in which he came to include, as a subspecies of it, at least eight perfectly distinct species (HORN, 1926). Thanks to RIVALIER (1948) order was finally made in this amazing chaos and specific individuality was at last restored for some well-defined species, such as *vivida* Boheman, *reliqua* Barker, *fasciculicornis* Barker, *bertolonia* W. Horn, *neglecta* Dejean. With regard to *herero*, lacking examples for study, RIVALIER provisory stated that it was a subspecies of *neglecta*, but in a later paper (1957) finally recognized it, without further comments, as a full species. Nevertheless MANDL (1970) again considered *herero* as a subspecies of *candida*.

Since I have at my disposal a short but homogeneous series of specimens coming just from Okahandja, I could come, unlike former authors, to mature a precise idea of *herero* and of the exactness of BARKER's opinion on its specific validity. The characters emphasized by PÉRINGUEY (1892) and especially by BARKER (1919) seem in fact to greatly differentiate *herero* and not to allow any muddles with other similar species. Especially evident appear to be the coppery emerald-green coloration of the elytral ground, strongly contrasting with ivory-white markings, and the typical shape of the female elytra, sinuate below the shoulders, considerably amplified about middle and attenuated behind. The most similar species seems to be *differens*, from which *herero* can be easily recognizable by the lack of the white decumbent hairs on either cheek.

As far as I know, *L. herero* seems to be restricted to South West Africa. The only surely recognized locality still remains Okahandja, to which HORN (1920) however added the following: Salem (Swakop), Windhoek, Kanus (Keetmanshoop) and Narubis. More recently MANDL (1970) reported the species also from Gobabeb. *L. herero* appears consequently to be an inland species, limited to river-bed or stream banks habitats, and geographically restricted to Nama- and Damaraland.

Since I do not know *braunsi* Barker I cannot comment on it. This form appears however to be very apart from the known range of *herero* and may be possibly independent of it.

*Lophyra* (s. str.) *damara* (Péringuey, 1892) (Figs 6, 7).

*Cicindela damara* PÉRINGUEY, 1892, Trans. S. Afr. phil. Soc., p. 35.

*Cicindela neglecta* var. *damara*; HORN, 1894, Dt. ent. Z., p. 310.

*Cicindela brevicollis neglecta* ab. *damara*; HORN, 1905, Dt. ent. Z., p. 43.

*Cicindela brevicollis vivida* f. loc. *damara*; HORN, 1920, Ark. Zool., 11, p. 16.

*Cicindela reliqua damara*; BARKER, 1920, Ann. Durban Mus., p. 284.

*Cicindela obliquo-graciliaenea damara*; BARKER, 1920, Ann. Durban Mus., p. 285.

*Cicindela brevicollis vivida* var. *damara*; HORN, 1926, in: Junk, Col. Cat., p. 147.

*Finding localities*: Swakopmund, mouth of Swakop River, 23.XII.72, 8 ♂♂ 4 ♀♀ (*subsp.* ?); Walvis Bay (Namib Desert) (Figs 2, 3), 24.XII.72, 8 ♂♂ 4 ♀♀; Walvis Bay, 26.XII.72, ♂♂ ♀♀.

*Remarks:* the fortunate collection of a conspicuous series of specimens (more than 100 individuals) allows me to clarify the taxonomical status of this species, which according to the past literature seems to have been even more neglected and misappreciated. *Cicindela damara* was in fact described by PÉRINGUEY (1892) as a full species coming from the topo-

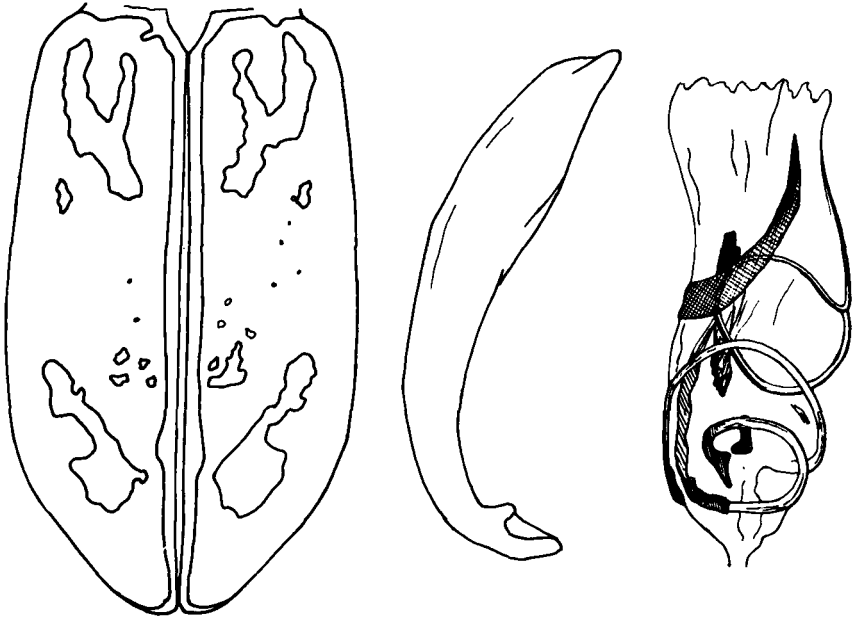


Fig. 6. — *Lophyra* (s. str.) *damara* (Pér.): elytral maculation, aedeagus (dorsal aspect) and inner sac of aedeagus (from left to right).

typical locality of Sandwich Harbour, few miles South of Walvis Bay. In 1905 HORN already stated that it was, however, side by side with *vivida* Boheman, simply an individual variety of *neglecta* Dejean, this last regarded as a subspecies of *brevicollis* Wiedemann. This taxonomical statement was later maintained (HORN, 1908, 1915), until HORN, raising *vivida* to a subspecific rank, made *damara* a local form of *vivida* of no particular importance (HORN, 1920, 1926, 1938).

BARKER also (1920) appeared to be puzzled by *damara*, the type of which (a ♀) he relates being given by PÉRINGUEY for examination. After giving reasons for his persuasion that *damara* must be considered distinct from *candida*, with which — and especially with its form *mixta* Chaudoir — its elytral maculation shows the strongest similarities, BARKER finally pointed out that some important characters, and particularly the shape of

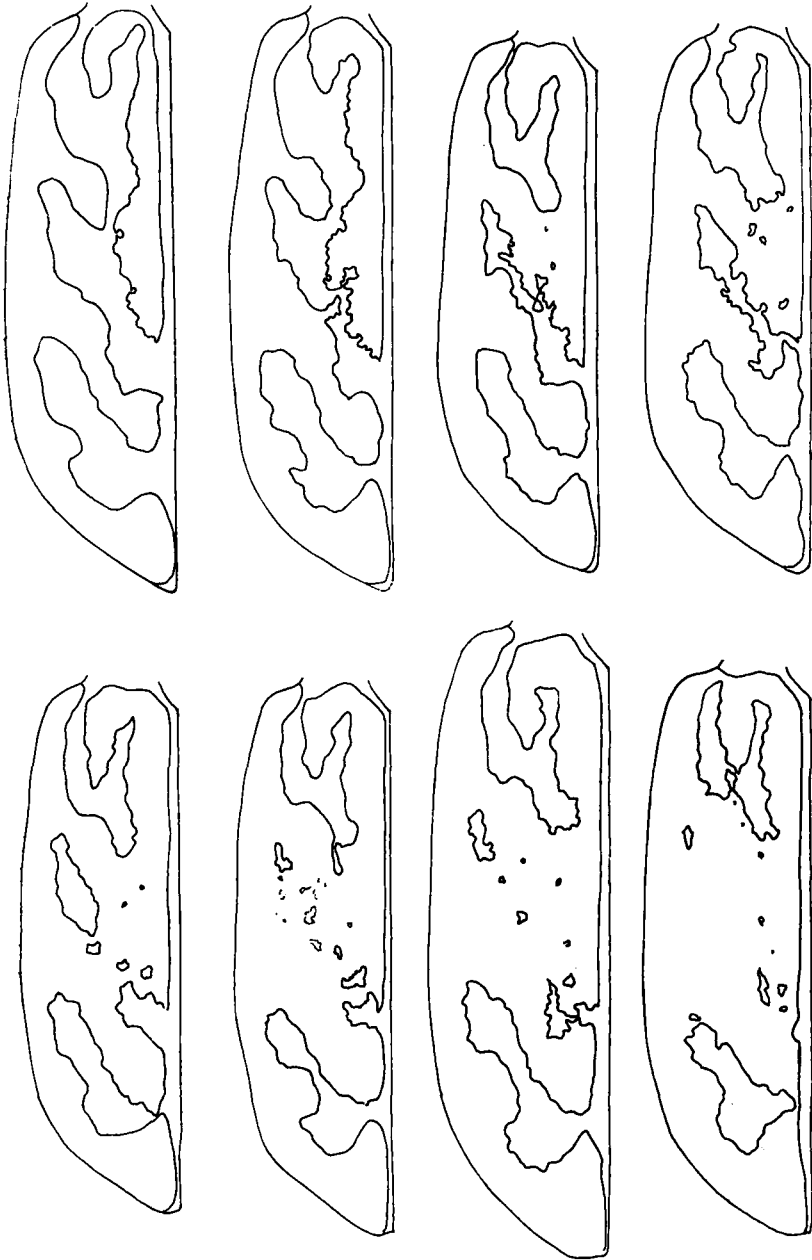


Fig. 7. — *Lophyra* (s. str.) *damara* (Pér.): left elytron of some specimens, showing different stages of marking expansion on disk.

eyes and prothorax, indicate that the nearest affinities of *damara* lie with *reliqua*. BARKER therefore made *damara* as a local form of *reliqua*, but immediately after, at the end of the same paper, he placed it into *obliquo-graciliaenea*, which in his mind was the same species or subspecies as his *reliqua* and had consequently priority of publication.

From then onwards nobody seems to have been concerned with *damara*. RIVALIER (1948, 1957) did not make any mention of it, since this form was completely unknown to him. To his list of the species of *Lophyra* s. str. belonging to the African fauna (RIVALIER, 1957) we can nevertheless now add *damara* as a distinct, well-defined, perfectly recognizable species; the abundant material that I have seen allow me in fact to completely confirm PÉRINGUEY's diagnosis. Dr RIVALIER also, who kindly studied some of my specimens, supported my statement with his authoritative judgement. The lot befallen to *damara* through the literature appears however to be quite singular, since this species was sufficiently well described and since PÉRINGUEY supplied, in plate I of his work, an accurate portrait in which *damara* is easily recognizable. Another figure of the species, limited to its elytral maculation, is provided by HORN (1938, pl. 40, fig. 12).

With regard to doubts and confusions to which *damara* gave rise in past times, it seems to me of a certain interest to give here a new short description of this species.

Medium in size (mm 10-12). Head and prothorax dark reddish-bronze, elytra very dark bronze, with generally extended ivory-white maculation. Legs quite elongated, femora bright cupreous, tibiae and « knees » dark blackish-green.

Head: labrum yellow, convex in the centre, triangular in front, tridentate at the apex; six setigerous punctures near forward edge. Labial and maxillary palpi testaceous, the last joints almost completely metallic greenish-black. Vertex and front covered with fine wrinkles; some blue and reddish reflections particularly evident between the eyes and near the margin of the labrum. Scape covered by numerous white hairs on the back edge, joints 2-4 of the antennae with some sparse hairs; joints 5-11 reddish-brown, with a fine short pubescence.

Thorax: pronotum reddish-bronze, with strong blue transversal impressions near the upper and the lower margins; surface granulated. Long white hairs covering the sides, a few hairs also sparsely on disk.

Elytra elongated, nearly flat on the upper part, partially sub-parallel sided, closely but not deeply punctured. In the latter part of their back curve, the edge is micro-serrulate. Elytral markings usually well developed, showing a strong tendency of the various lunules to expand and amalgamate each other so much that the full elytra become, in the extreme cases, about completely pale-yellow white, with dark pigmented ground restricted to

some small tridentate areas under the basal dot and on lesser part of disk.

Among the long series of specimens collected at Walvis Bay, most of the individuals have an enlarged, intrusive, largely confluent elytral maculation. Although less numerous, there are all the intermediate forms from this pattern of maculation to another one more similar to the typical marking of the most part of the species of *Lophyra*, with separated lunules and dark pigmented ground more evident and developed. Nevertheless, also in the extreme cases of marking reduction, the white maculation remains still relatively broad, with complete side margin, and basal and ixtasutural dots always connected. In intermediate individuals, the second ixtasutural dot especially shows a marked tendency to have indefinite margins, enlarging on disk towards middle band and humeral lunule, then accomplishing a larger or smaller coalescence of markings. The other spots or lunules on the contrary appear to be much more fixed in contour. The full white elytral maculation seems therefore to be mainly caused by the progressive expansion on the disk of the second ixtasutural dot.

The small series of specimens collected near the mouth of the Swakop River however presents somewhat different features, since none of the individuals appears to have any sign of dilated markings. Elytral maculation is here composed of the ordinary lunules, all together connected in a complete side margin, by the basal dot and by the two ixtasutural spots, these last well separated in most of the specimens. In some individuals, however, the second ixtasutural spot shows an initial fraying of margins and an hardly sketched tendency to expanding on the disk. The Swakop series therefore appears to have an elytral maculation quite identical to the one of the Walvis Bay specimens with greatest marking reduction; and since this character appears to be absolutely fixed in the 12 specimens that I have seen, may be it will be possible to recognize in it some racial significance. The sample scarcity, with regard to a character that seems to have only a statistical meaning, does not enable me, unfortunately, to make a definite statement on this subject.

As described above, *L. damara* seems to me a perfectly distinct species, easily recognizable from the other ones of this genus. It is particularly well differentiated both from *reliqua* and *vivida*, to which, as we have seen above, it has been in past times related as a subspecies or a local form. Both these species have a quite different appearance, and *vivida* moreover has a completely separated geographical distribution which seems restricted to South East Africa from Rhodesia to Natal and Mozambique (a record from Lake Ngami, Botswana, appears to be doubtful and needs to be confirmed). *L. reliqua*, on the contrary, is a sympatrically living species also collected at Walvis Bay: thus, I have

no doubt that it is specifically distinct and genetically separate from *damara*.

As far as I know, *L. damara* is a sand-dwelling species endemic to South West Africa and more precisely to the coastal area of the central Namib, in the immediate surroundings of Walvis Bay; it appears therefore to have a very limited range. The species may have originally been isolated from other related populations to the West of Namib desert area, and in this small range, because of long isolation, may have developed to actual specific state of evolutionary change.

*Habrodera nilotica* (Dejean, 1825).

- Cicindela nilotica* DEJEAN, 1825, Spec. Col., I, p. 119.  
*Habrodera nilotica*; MOTSCHOUJSKY, 1862, Etud. Ent., X, p. 22.  
*Cicindela nilotica*; PÉRINGUEY, 1892, Trans. S. Afr. phil. Soc., p. 35.  
*Cicindela nilotica*; HORN, 1926, in: Junk, Col. Cat., 86, p. 143.  
*Habrodera nilotica*; RIVALIER, 1950, Rev. fr. Ent., p. 243.

*Finding localities*: Walvis Bay (Namib Desert) (Figs 2, 3), 24.XII.72, 12 ♂♂ 5 ♀♀; Walvis Bay, 26.XII.72, 1 ♂ 4 ♀♀.

*Remarks*: this monotypic, widely distributed species occurs in the whole African continent, with the exception of the Maghreb area only. With regard to South West Africa, *H. nilotica* was already been recorded from Sandwich Harbour (Sandwichhafen) both by PÉRINGUEY (1892) and BASILEWSKY (1958). This locality, as I stated above, ranges a few miles South of Walvis Bay.

*Eurymorpha cyanipes* Hope, 1838.

- Eurymorpha cyanipes* HOPE, 1838, Col. Man. II, p. 160.  
*Eurymorpha mouffleti*; FAIRMAIRE, 1856, Anns Soc. ent. Fr., IV, p. 95.  
*Eurymorpha bohemani*; BOHEMAN, 1860, Ofv. Vet. Akad. Förh., p. 4.  
*Eurymorpha cyanipes*; HORN, 1926, in: Junk, Col. Cat., 86, p. 312.

*Finding localities*: Swakopmund, mouth of Swakop River, 23.XII.72, 1 ♂; Walvis Bay (Namib Desert) (Figs 2, 3), 24.XII.72, 3 ♂♂ 5 ♀♀; Cape Cross (Kaap Kruiz), 25.XII.72, 14 ♂♂ 11 ♀♀; Walvis Bay, 26.XII.72, 1 ♀; Sandwich Harbour, 3.I.73, 3 ♂♂ 1 ♀.

*Remarks*: according to PÉRINGUEY (1892), HOPE was the first to describe and draw this species but never did know from whence it came, and he thought it to be a native of Madagascar. In any case his description was surely made on the basis of a metallic green coloured specimen. On the basis of bronze specimens, on the contrary, FAIRMAIRE and BOHEMAN later described as distinct species *mouffleti* Fairm. from Moçâmedes and *bohemani* Boh. from Kuiseb River; but PÉRINGUEY had already correctly



considered them synonymous with *cyanipes*, after having examined several hundred specimens in which the bronze colour appeared to be the rule and the green one the exception.

The long series of *E. cyanipes* collected by my father completely confirms PÉRINGUEY's observation. I have found among them one green specimen only, collected at Cape Cross, while several other individuals appear to have a very dark elytral colour, almost black with blue-violaceous reflections, as occasionally stated also by PÉRINGUEY.

To the already mentioned localities HORN (1908) added the bay of Lüderitz (Angra Pequena) and a locality « Gr.-Anichab » North of it. In addition PÉRINGUEY (1892) related that *cyanipes* had not been captured so far South as Port Nolloth, although eagerly looked for. The range of this species appears consequently to be very limited, approximately from southern Angola to the Orange River, and to be therefore confined to the coast of the true Namib. According to KOCH (1961, 1962) the degree of endemism of this section is extraordinary: a similar state can be observed only in the fauna of ancient islands, and there is in fact no other continental area known which can compete with the true Namib in this respect. This appears to belong to a long undisturbed isolation, during which largely independent evolutionary pressures induced significant modifications of ancestral species. *E. cyanipes* appears to be one of the most differentiate elements of this remarkable fauna, as the absence of near relatives in the African continent clearly demonstrates.

*E. cyanipes* is an halophylous sun-loving species, confined to the sea-shore mostly, but also met with on the sand dune at no great distance from the sea. Diurnal and active during hot hours it was found running with great rapidity, and taking readily to flight.

#### DISCUSSION

With regard to the Cicindelid fauna, Namibia includes some endemic species of great phylogenetical antiquity, without strictly related species in the actual African fauna. These endemic elements lend to this region a very peculiar faunistic face and give evidence of its ancient origin and of an evolutionary history largely independent of the remaining part of the African continent. They can be usually considered as a relic of ancestral stems which may have originally been isolated West of Namib by desertic conditions and becoming adapted to them. I am especially referring to *Platychile pallida* (Fabricius), a monospecific genus which is restricted to South-western coasts from true Namib to Cape Colony, where it occurs on the beaches under stones or in burrows in the sand dunes, with nocturnal or dusk-preferring habits (HORN, 1923). This interesting genus,

for which was created the separate sub-tribe *Platychilina* (HORN, 1926), was interpreted by BASILEWSKY (1966) as a relic of the ancestral African stock of *Megacephalinae*, whose linkages with actual *Megacephala* are quite remote but indubitable. PÉRINGUEY also (1892) had properly understood these phylogenetical correlations: « Although the shape of the shape of the mentum and of the palpi are those of *Mantichora*, I believe that the proper place of this genus is in the vicinity of *Tetracha* and *Megacephala*, in spite of its distinct facies, for they have in common a seven-jointed abdomen in the male, with dilated tarsi, and mandibles nearly analogous; the apical joints of the palpi are also in proportion more thickened than those of *Mantichora*, and like *Tetracha* they are nocturnal ». Well, while all the characters of the African *Megacephala* (which appear to be clearly neogenetic) and the actual distribution of this genus in the whole continent seem to demonstrate their relatively recent northern penetration, the existence of *Platychile* in Namib coasts represents the trace of an older stem from which originated — crossing to South America and, through the Palaeoantarctic, to the Australian Platform — the whole actual tribe. From South America the ancestral *Megacephalae* gained the Neoarctic region and from there Europe (there is some fossil evidence in the Baltic ambers); then, during geocratic periods of the Montian age, they could colonize the African continent, without reaching however the South of it or crossing to Madagascar, already definitively isolated. BASILEWSKY's solution seems in fact to explain very well both the presence of *Platychile* in South West Africa and the lack of *Megacephala* in the whole coastal zone of Namibia, in Madagascar and in the most southern regions — from Cape to Natal — of Africa. In their recent migration to South and South-West, they appear to have found an insurmountable barrier in the Karroos subdesert steppe and in the Namib desert area.

Another exceptional peculiarity of the Namib Cicindelid fauna is *Mantica horni* Kolbe, a species related to the large-sized *Mantichora* but of lesser body size, which was described by KOLBE (1896, Ent. Nachr. Bl., XXII, p. 5) as a distinct genus and a new species on the basis of only two ♂♂ coming from the Great Namaland (Han-ami Plateau). As far as I know, it has never been since then collected again. This amazing beetle, about which nothing practically is actually known, is efficaciously figured by HORN (1910, tab. 9, fig. 1). KOLBE's original description was reproduced in the English language by PÉRINGUEY (1896).

A third genus also restricted to coastal Namibia is *Eurymorpha*, whose only species (*cyanipes* Hope) lives on the oceanic beaches from southern Angola (Moçâmedes) southwards to Orange River. Characterized by its amplified and flattened body shape, and by its labrum and mandibles of the same metallic colour of the body, this remarkable species constitutes

by itself a separate group of the sub-tribe *Cicindelina* W. Horn (RIVALIER, 1971), and does not seem to have in it any near relatives.

In South West Africa the genera *Megacephala* (it is in fact present with its typical subspecies *M. regalis* Boheman: BASILEWSKY, 1966) and *Mantichora* are also represented. Belonging to this last genus three species at least occur in this region, and one of these (*M. gruti* Boucard) seems to be endemic (Nama- and Damaraland). Several species of *Dromica* (HORN, 1926) are present in South West Africa, while no *Prothyma* have been until now recorded (RIVALIER, 1964).

The study of the Cicindelidae seems therefore to confirm the great faunistic and biogeographical interest of Namibia, and its peculiar high ratio of endemism.

#### SUMMARY

The author gives an annotated list of the Cicindelidae collected by his father in South West Africa (Namibia) during a brief trip made in December 1972-January 1973. Two species especially, *Lophyra* (s. str.) *herero* (Péringuey, 1892) and *Lophyra* (s. str.) *damara* (Péringuey, 1892), appeared to be of a great interest, because of misunderstandings in the past literature. On the basis of the collected materials, both are recognized as distinct species and one of them (*L. damara*) is here briefly redescribed.

#### RIASSUNTO

L'Autore fornisce un elenco ragionato dei Cicindelidi raccolti da suo padre nell'Africa del Sud Ovest (Namibia) durante un breve viaggio effettuato tra il dicembre 1972 e i primi giorni del gennaio 1973. Due specie soprattutto, *Lophyra* (s. str.) *herero* (Péringuey, 1892) e *Lophyra* (s. str.) *damara* (Péringuey, 1892), sono risultate di grande interesse, avendo dato luogo, nella passata letteratura, a confusioni e incomprensioni. Sulla base del notevole materiale raccolto, l'Autore è pervenuto a definire il loro status tassonomico riconoscendole come specie distinte. Della più misconosciuta delle due (*L. damara*) fornisce poi una breve ridescrizione.

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