

# Distribution of the tiger beetle *Lophyridia caucasica* (Adams, 1817) in Iran (Coleoptera: Cicindelidae)

by Michael Franzen and Jörg Gebert

**Abstract.** The occurrence of the tiger beetle *Lophyridia caucasica* in western Iran is confirmed from the re-examination of old museum specimens and from newly collected material. Morphological characters, i.e. the male genital morphology, clearly demonstrates its presence in Iran together with the similar *L. sturmi*. *L. caucasica* appears to have a scattered distribution in Azerbaijan-e Gharbi, Azarbayjan-e Sharqi, Gilan, Zanjān, and Khuzestan provinces.

**Kurzfassung.** Anhand von älterem Museumsmaterial und neu gesammelten Stücken wird das Vorkommen des Sandlaufkäfers *Lophyridia caucasica* im Iran bestätigt. Nach morphologischen Merkmalen, besonders der Genitalmorphologie der Männchen, ist das Vorkommen der Art im Iran neben *L. sturmi* eindeutig. *L. caucasica* scheint eine verstreute Verbreitung im westlichen Teil des Landes aufzuweisen. Fundorte sind aus den Provinzen Azerbaijan-e Gharbi, Azarbayjan-e Sharqi, Gilan, Zanjān and Khuzestan bekannt.

**Key words.** Coleoptera, Cicindelidae, *Lophyridia caucasica*, Iran, distribution.

## Introduction

The tiger beetle *Lophyridia caucasica* (Fig. 1) is commonly cited in checklists and catalogue works as occurring in Iran (e.g. HORN 1926, ALI 1978, WIESNER 1992). However, in his survey of the Iranian tiger beetles, NAVIAUX (1983) mentioned no locality records from this country. Moreover, CASSOLA (1999) recently questioned its occurrence in Iran and suggested that all older records of this species refer to the closely related *L. sturmi* (Ménétriés, 1832).

Both species, *L. caucasica* and *L. sturmi*, are apparently closely related and rather similar in general appearance. But in addition to its smaller size, *L. caucasica* is easily distinguished from *L. sturmi* by the shape of its aedeagus: in *L. caucasica* it is strongly curved with a hooked outside and a knobbed inside tip. The aedeagus of *L. sturmi* is more elongate, distinctly less curved, with a pin-shaped, pointed tip (Fig. 2). In addition to this morphological character, there are also differences in habitat choice. Both species inhabit sandy beaches. But unlike to *L. sturmi*, which seems to occur commonly in coastal saline habitats (mostly beaches in Iran, cf. RIVALIER 1967, NAVIAUX 1983), *L. caucasica* is completely restricted to riparian habitats, i.e. sandy river beaches (data from Turkey, FRANZEN unpublished).

We report here records of *L. caucasica* from Iran. Abbreviations used are: CHS = Coll. HEINZ, Schwanfeld; CFO = Coll. FRANZEN, Oberneuching; CGR = Coll. GEBERT, Schleife-Rohne; CHJ = coll. HAJDAJ, Jezov; ZSM = Zoologische Staatssammlung, München.



Fig. 1. A specimen of *Lophyridia caucasica* from Turkey (Nevşehir prov.: Kızılırmak river 20 km W of Avanos). Photo J. Gebert.

## Results

Literature records of *L. caucasica* from Iran are sparse. One of the first to mention the species was BODEMEYER (1927), who found *L. caucasica* extremely abundant alongside the rarer *L. sturmi* at "Tariki-Rud" ("In ganz ungeheueren Mengen flog *Cicindela caucasica* Ad., sehr selten die var. *sturmi* Mén. ..."). In addition, MANDL (1957) recorded the species from a river north of Miāndoāb (Azerbaijan-e Gharbi prov.), and later (MANDL 1963) from the banks of the Dez river near Harmalah (Khuzestan prov.) as well as from another unnamed locality in southern Iran ("Südpersien, Prov. Chusistan").

We checked one of BODEMEYER's specimens (♂) which is housed in ZSM. The individual clearly belongs to *L. caucasica* (Fig. 2). The original labelling states only "Nord-Persien, Elburs-Gebirge" [= northern Persia, Elborz mountains] as the collecting site, but according to BODEMEYER (1927) it should have been caught in the environment of Tarik Rud, a tributary of Sefid Rud about 30-50 km SW of Rasht in the Gilan province. Furthermore, we checked two specimens (♂♀) which were recorded by MANDL (1963) from Harmalah (approx. 31°53'N, 48°31'E, Khuzestan prov.; 26.9.1960, HALTENROTH leg.; ZSM). Both specimens are in fact *L. caucasica* (Fig. 2).

Other Iranian material of *L. caucasica* seen by us is from the following localities (see Fig. 3): Sefid-rud 5 km south of Ebrahimabad (Miyane), 1050 m (Azarbayjan-e Sharqi prov., 36°26'N 47°51'E), 19.6.2000, E. & P. HAJDAJ leg. (2♂, 1♀ CGR; 3♂, 5♀ CHJ), Sefid-rud below Rudbar (Gilan prov.), 3.8.1967, HEINZ leg. (1♂, 3♀ CHS), Zanjān-rud below Zanjān, 1500 m (Zanjān prov.), 2.7.1971, REINIG leg. (1♂, 3♀ ZSM). It should also be noted that the ZSM houses a large series of *L. caucasica* from Ordubad (Azerbaijan-Nakhichevan),

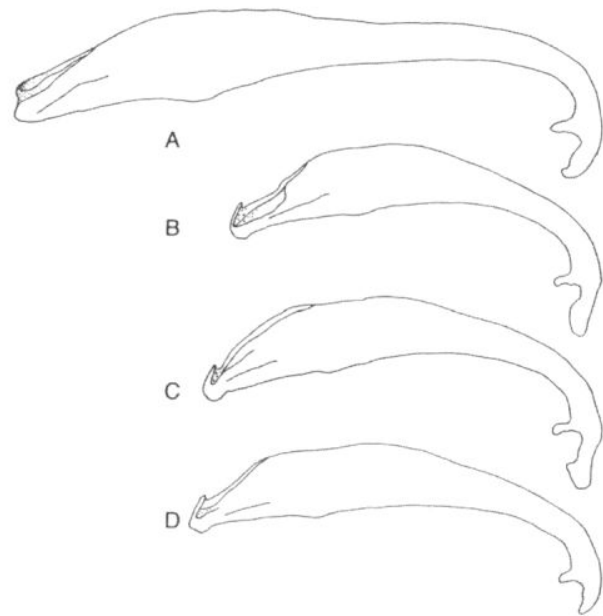


Fig. 2. Male genitalia (aedeagus) of *Lophyridia sturmi* (A - Naryn, Kyrgyzstan [CFO]) and *Lophyridia caucasica* (B - 12 km SW Erzincan, Turkey [CFO]; C - „Elburs“, Iran [ZSM]; D - Harmalah, Iran [ZSM]).

additionally labeled "13. Klzr." [= 1913, Kulzer leg.], a locality on the Azarbaijan-Iran border. Ordubad has already been mentioned as a locality for *L. caucasica* by LUTSHNIK (1915). This record also confirms the species' occurrence in Azarbaijan, which was also questioned by CASSOLA (1999).

All Iranian records of *L. caucasica* are in the western part of the country, within the Reza'iyeh [Urmieh] basin (Miāndoab), the Caspian region/Elborz mountains (Sefd-rud, Zanjān-rud), and the Khuzestan plain (Harmalah). It appears that these localities are at the eastern distribution limit of the species. Further to the west, *L. caucasica* is a common insect of the sandy river beaches of central and southeastern Turkey (e.g. various localities in the Büyük Zab valley near Hakkari: CASSOLA 1999, FRANZEN unpubl.), and has also been reported from adjacent Iraq (e.g. "Mesopotamia" and "Assur": HORN 1927).

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### References

- ALI, H. A. (1978): Faunistic study of the Cicindelidae (Coleoptera) of Iraq and southwest Asia. – The Coleopterists' Bulletin 32 (1): 1-20, Chicago.
- BODEMEYER, B., v. (1927): Ueber meine entomologischen Reisen. Bd. IV. Iran, das Elbursgebirge. - Stuttgart.
- CASSOLA, F. (1999): Studies on tiger beetles CVII. The cicindelid fauna of Anatolia: faunistics and biogeography (Coleoptera, Cicindelidae). - Biogeographia 20 (Biogeografia dell'Anatolia): 229-276, Siena.

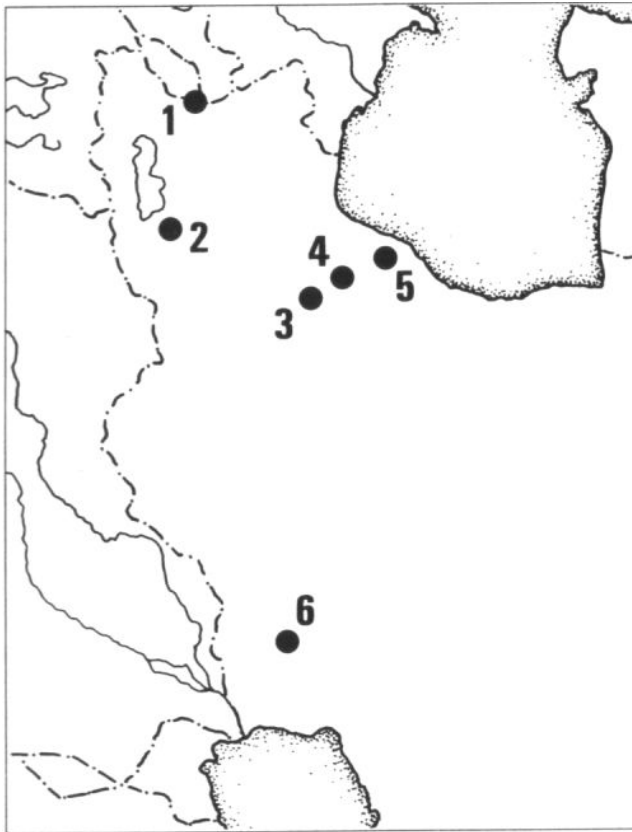


Fig. 3. Locality records of *L. caucasica* in Azerbaijan-Nakhichevan and Iran. AZARBAIJAN-NAKHICHEVAN: 1 - Ordubad (LUTSHNIK 1915). IRAN: 2 - north of Miāndoāb (Azerbaijan-e Gharbi prov.; MANDL 1957); 3 - Sefid Rod 5 km south of Ebrahimabad (Miyane) (Azarbayjan-e Sharqi prov.; this paper); 4 - Zanjān-rud below Zanjān (Zanjān prov.; this paper); 5 - Tarik Rod, a tributary of the Sefid Rud near Rudbar (Gilan prov.) (BODEMEYER 1927) and Sefid Rod below Rudbar (Gilan prov.; this paper); 6 - Dez river near Harmalah (Khuzestan prov.; MANDL 1963).

- HORN, W. (1926): Carabidae: Cicindelinae. In: W. Junk & S. Schenkling (Eds.), *Coleopterorum Catalogus*, Pars 86. -Berlin.
- HORN, W. (1927): Zur Erforschung des Persischen Golfes. Beitrag Nr. 1. Einleitung und Cicindelinae. -*Entomologische Mitteilungen* 16 (1): 53-60, Berlin-Dahlem.
- LUTSHNIK, V. (1915): Materialia ad cognitionem faunae Cicindelinarum Caucasi. - *Izvestiya Kavkazskago Muzeya* 9 (1): 24-32, Tbilisi.
- MANDL, K. (1957): Ergebnisse der Dr. Löfflerschen Iran-Expedition 1956. Cicindelidae und *Calosoma* (Col.). - *Anzeiger der mathematisch-naturwissenschaftlichen Klasse der Österreichischen Akademie der Wissenschaften* 15: 328-332, Vienna.
- MANDL, K. (1963): Zwei neue Cicindela-Formen aus dem vorderen Orient (Col., Cicindelidae). - *Mitteilungen der Münchener Entomologischen Gesellschaft* 53: 1-15, Munich.
- NAVIAUX, R. (1983): Coleoptera, Cicindelidae. Une approche de la faune d'Iran. - *Revue Scientifique du Bourbonnais* 1983: 73-99, Moulins.
- RIVALIER, E. (1967). Contribution à la faune de l'Iran. 5. Coléoptères Cicindelidae. - *Annales de la Société entomologique de France (ICS.)* 3 (4): 1099-1102, Paris.
- WIESNER, J. (1992): Verzeichnis der Sandlaufkäfer der Welt (Checklist of the tiger beetles of the world). - *Keltern*, 364 pp.

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