

SHORT NOTE: **NOTES ON THE OCCURRENCE AND DISTRIBUTION OF *LACERTA HORVATHI*** **MÉHELY, 1904 IN FEDERAL REPUBLIC OF GERMANY**

MASSIMO CAPULA¹ AND LUCA LUISI¹¹

¹Department of Animal and Human Biology, University of Rome 'La Sapienza', Via Borelli 50, 00161 Rome, Italy.

(Accepted 20.11.89)

During herpetological investigations in the F.R. Germany province of Munich we gathered new interesting distributional data on *Lacerta horvathi* Méhely, a lacertid lizard whose occurrence has never before been reported in F.R. Germany (Blauscheck, 1985). The investigations took place in the southernmost territory of the Munich province, in a study area of about 20km (see Fig. 1), which was sampled in the periods July-August 1989.

Lacerta horvathi is a relatively poorly known species assigned to a problematic group of lacertid lizards, i.e. *Archaeolacerta*, considered either as a distinct genus (Lanza, Cei and Crespo, 1977; Guillaume and Lanza, 1982), or as a subgenus (Mayer and Tiedemann, 1982; Lutz and Mayer, 1985; Lutz, Bischoff and Mayer, 1986). The phylogenetic relationships of this species are not clear: on one hand karyological and histological data would indicate that *L. horvathi* belongs to the same species group of *L. vivipara*, as these lacertid lizards have similar karyotypes (2n = 36, with 36 acrocentric macrochromosomes and no microchromosomes) (De Luca and Dulić, 1988; Capula, Lapini and Capanna, 1989) and present a similar structure of the spiny epithelium of the hemipenis (Böhme, 1971); on the other, protein electrophoresis and micro-complement fixation analysis would suggest that *L. horvathi* is closely related to *L. bedriagae* and *L. oxycephala*, as pointed out by Mayer and Tiedemann (1982) and Lutz and Mayer (1985).

L. horvathi is present, with scattered populations, in northern and western Yugoslavia, in northeastern Italy, and in southwestern Austria. In Yugoslavia this lizard inhabits the mountain regions of Dalmatia (Velebit and Kapela Mountains), Istria (Učka Mount), and Slovenia (Julian Alps) (Brelj and Džukić, 1974; Bischoff, 1984). In Italy, where it occurs up to an altitude of 2000m a.s.l. (Darsa, 1972), *L. horvathi* has been till now encountered in few localities of the Carnic and Julian Alps (Lapini and Dolce, 1983; Lapini, 1988). In Austria, where the species was discovered only recently by Grillitsch and Tiedemann (1986), it occurs in at least nine localities of the Carinthia Region (Eggenberger, quoted by Lapini, 1988).

Up to now it was thought that both northern and western limits of this lizard's range were the Carnic Alps (Forni Avoltri, Udine, NE Italy) (Lapini and Dolce, 1983). In this note we report three new locality records of *L. horvathi* which extend the known range of this species to southern F.R. Germany. Fig. 1 shows the approximate locations of the sites in which

specimens of *L. horvathi* were encountered and collected. These specimens were given to the Natural History Museum (Zoological Section) of the University of Florence, and are now preserved in the Herpetological Collection of this Institute. In the localities 1 and 2 (numbers refer to Fig. 1), which are sited 5km E of Mittenwald, were collected four (2 males, 2 females) and two (1 female, 1 juvenile) specimens respectively. In the locality 3, which is sited 6km SE of Vorderriss, was collected only an adult female. In all these sites *L. horvathi* apparently does not coexist with any other lacertid lizard. The specimens captured were encountered only on the rock slopes lacking in vegetation of the northern side of the Karwendel Mountains (Karwendelgebirge), at an altitude of about 800m a.s.l., close to the border between F.R. Germany and Austria. Morphometric and meristic characters of the adult specimens collected (reported in Table 1), together with colouration features and other morphological characters examined, are very similar to those reported by Lapini and Dolce (1983) for Italian and Yugoslavian specimens.

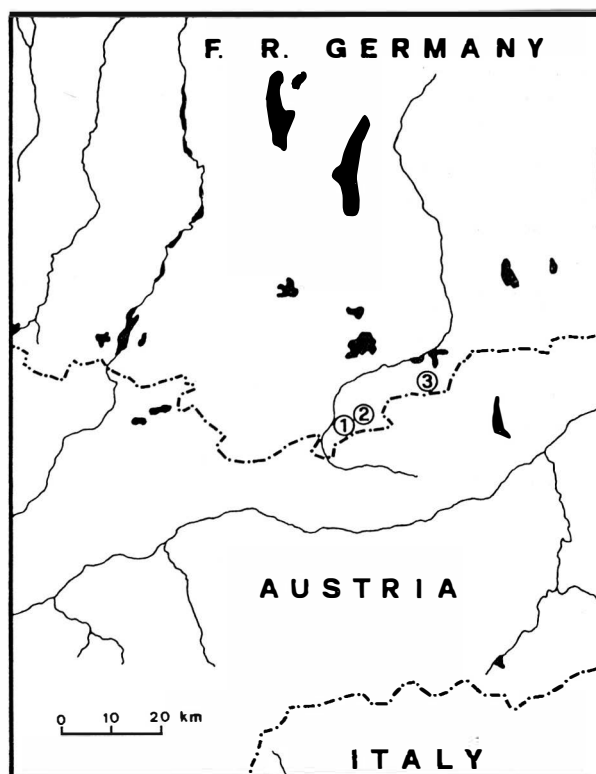


Fig. 1: 1, 2, 3: Locality records of *Lacerta horvathi* in Federal Republic of Germany.

	♂	♂	♀	♀	♀	♀
Head length	12.6	11.9	13.0	11.7	10.4	10.9
Head width	8.6	7.1	8.1	7.1	6.5	7.6
Head depth	5.0	4.0	4.9	4.0	4.0	3.7
Body length	39.8	35.4	46.3	38.1	32.0	44.0
Tail length	42.6(b)	87.2(i)	86.2(r)	84.7(i)	74.1(i)	57.2(b)
Foreleg length	17.3	16.4	18.1	15.0	14.2	16.3
Hindlimb length	27.0	26.3	28.8	23.5	21.4	24.5
Dorsal scales in a series at midbody	44	43	42	44	47	45

TABLE 1: Morphometric and meristic characters of 2 males and 4 females of *L. horvathi* from the study area. Measurements are in mm. (b) = broken tail; (i) = intact tail; (r) = regenerated tail.

Our observations establish that *L. horvathi* has a far more widespread occurrence in the Alps than is indicated by the existing distribution accounts on the species (Lapini and Dolce, 1983; Bischoff, 1984; Grillitsch and Tiedemann, 1986). *Lacerta horvathi* is a new species to the F.R. Germany fauna, and the new localities discovered in this country extend the known species range from NE Italy approximately 100km to north and 110km to west. Since *L. horvathi* occurs on the northern side of the Karwendel Mountains, we can infer that the species is also present in western Austria, on the southern side of this Massif, and, possibly, in other alpine localities of Austria and southern F.R. Germany.

REFERENCES

- Bischoff, W. (1984). *Lacerta horvathi* Mähely 1904 — Kroatische Gebirgseidechse. In: *Handbuch der Reptilien und Amphibien Europas*, Band 2/I Echten (Sauria) II. (Lacertidae II: *Lacerta*), 265-275. Böhme, W. (Editor). Wiesbaden: AULA Verlag.
- Blauscheck, R. (1985). *Amphibien und Reptilien Deutschlands*. Hannover: Landbuch-Verlag GmbH.
- Böhme, W. (1971). Über das Stachlepitel am Hemipenis lacertider Eidechsen und seine systematische Bedeutung. *Z. zool. Syst. Evol.-forsch.* **9**, 187-223.
- Brelih, S. and Džukić, G. (1974). Catalogus faunae Jugoslaviae. IV/2. Reptilia. *Con. Acad. Sci. Rep. Slov.*, Ljubljana, **4**(2), 1-33.
- Capula, M., Lapini L. and Capanna, E. (1989). The karyotype of *Lacerta horváthi* Mähely, 1904 (Reptilia, Sauria, Lacertidae). *Genetica*, **79**, 11-16.
- Darsa, M. (1972). Anfibi e Rettili di Fusine. *Hyta. Notiz. U.E.I.* **2**(1), 3-13.
- De Luca, N. and Dulić, B. (1988). Karyotype of horvath's rock lizard *Lacerta (Archaeolacerta) horvathi* Mähely, 1904 (Reptilia: Lacertidae). *Amphibia-Reptilia*, **9**, 353-356.
- Grillitsch, H. and Tiedemann, F. (1986). *Lacerta horvathi* Mähely, 1904 — Erstnachweis für Österreich. *Ann. Naturhist. Mus. Wien.* **88/89** B, 357-359.
- Guillaume, C.-P. and Lanza, B. (1982). Comparaison électrophorétique de quelques espèces de Lacertidés méditerranéens. Genes *Podarcis* et *Archaeolacerta*. *Amphibia-Reptilia*, **4**, 361-375.
- Lanza, B., Cei, J. M. and Crespo, E. G. (1977). Immunological investigations on the taxonomic status of some Mediterranean lizards (Reptilia, Lacertidae). *Monit. zool. ital.* (N.S.) **11**, 211-221.
- Lapini, L. (1988). Osservazioni sulla fauna erpetologica (Amphibia, Reptilia) dell'alta Val Torre (Italia nord-orientale, Prealpi Giulie). *Gortania. Atti Museo Friul. Storia Nat.* **9** (1987), 201-222.
- Lapini, L. and Dolce, S. (1983). *Lacerta (Archaeolacerta) horváthi* Mähely, 1904 in Italia: nuove stazioni per le Alpi Carniche e Giulie. *Gortania. Atti Museo Friul. Storia Nat.* **4** (1982), 213-225.
- Lutz, D., Bischoff, W. and Mayer, W. (1986). Chemo-systematische Untersuchungen zur Stellung von *Lacerta jayakari* Boulenger, 1887 sowie der Gattungen *Gallotia* Boulenger und *Psammotromus* Fitzinger (Sauria: Lacertidae). *Z. zool. Syst. Evol.-forsch.* **24**, 144-157.
- Lutz, D. and Mayer, W. (1985). Albumin evolution and its phylogenetic and taxonomic implications in several lacertid lizards. *Amphibia-Reptilia*, **6**, 53-61.
- Mayer, W. and Tiedemann, F. (1982). Chemotaxonomical investigations in the collective genus *Lacerta* (Lacertidae: Sauria) by means of protein electrophoresis. *Amphibia-Reptilia*, **2**, 349-355.