



## Additional data on the herpetological collection of Louis Amédée Lantz (1886–1953), with emphasis on specimens in the Natural History Museum, London

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### Abstract

Several recent papers have reviewed the life and work of French herpetologist Louis Amédée Lantz. They have detailed the composition of his collections deposited in several museums. However, since then, several other important specimens from his collections deposited at the Natural History Museum (NHM, UK) have come to light and we here present all of them in detail. We discovered paralectotypes of *Lacerta saxicola obscura* Lantz & Cyrén (BMNH 1918.11.21.5–7), syntypes of *Lacerta boemica* Sukhov (BMNH 1960.1.4.26–30, BMNH 1965.337–342) and *Lacerta viridis media* Lantz & Cyrén (BMNH 1960.1.4.25, 1966.512). We also identified numerous specimens from the French Mediterranean islands in Lantz's collection deposited at the NHM, some of which represent the first reported specimens of their species from certain islands. We here provide data on all these specimens. We also place the Mediterranean island specimens from the Lantz collection in their historical context and emphasize the historical and taxonomic value of these collections.

**Key words:** L.A. Lantz, type specimens, Mediterranean islands, Porquerolles, Port-Cros, France, BMNH

### Introduction

Louis Amédée Lantz (1886–1953) was a French herpetologist who spent 12 years in Russia and roughly 30 years in the United Kingdom working as a chemical engineer. He was involved in herpetology all his life, describing several new taxa and amassing large collections which are now proving to be very important from taxonomic, conservation and historical standpoints. They also include numerous types. Large parts of his herpetological collections were also deposited in both Russia and Georgia. One of us (I.D.) recently found a document in the St. Petersburg branch of the Archives of the Russian Academy of Sciences<sup>1</sup> indicating the acceptance of the L.A. Lantz collection from the Polytechnic Museum (Moscow). This collection comprised 12 boxes with 425 cans and test tubes containing lizards, one can containing a crocodile, 55 jars containing snakes and 158 cans containing a mixture of amphibians and invertebrates. There was an additional sheet (142) which provided a brief inventory of these boxes [however, with no clear indication of species composition]. These specimens were housed in the Zoological Museum of the Academy of Sciences of the USSR (now ZISP, Zoological Institute of Saint Petersburg) and curated by Georgy Feodorovich Sukhov (1899–1942), a friend, colleague and co-author of L.A. Lantz.

After leaving Russia in 1918 for England (Irène Lantz, pers. comm. to I.I.) L.A. Lantz deposited some of his specimens at the Natural History Museum, London (NHM), where he had previously sent material as early as 1913. He made several donations during the years he lived in England and through instructions he gave to his daughter Irène he even deposited material posthumously (Ineich & Doronin 2017; Ineich *et al.* 2017). Based on the data

1 Fund 55. Inventory 1. Case 200. Correspondence with correspondents of the Zoological Museum, 1930, letters A-Z. Sheet 141. Act of 25 Oct. 1930.

initially obtained from the NHM curator (P. Campbell), Ineich and Doronin (2017), and Ineich *et al.* (2017) established a list of the Lantz collection specimens present in that institution. However additional specimens given by Lantz to the NHM collections were found online using the NHM database and many other specimens collected and donated by Lantz have since been discovered by more thorough searches of the internal NHM database and original registers.

## Material and methods

We here list and discuss all Natural History Museum, London, Lantz specimens. This collection was formerly known as the British Museum of Natural History (BMNH) and although we here use NHM for the institution, we continue to use the BMNH prefix for registration numbers as still commonly accepted in scientific literature. All together the total number of Lantz specimens that we identified in the NHM collections is 841 in addition to several eggs representing both amphibians and reptiles. Lantz collections were deposited at the NHM in 1913, 1928, 1931, 1947, 1951 and 1965/1966 (after his death), with major donations in 1947 and 1951. Other museum acronyms used here are MNHN (Muséum national d'Histoire naturelle, Paris, France), ZISP (Zoological Institute of Saint Petersburg, Russia; formerly ZIL, Zoological Institute of Leningrad), and ZSM (Zoologische Staatssammlung München, Germany).

The second part of our paper reports on specimens of particular importance collected by Lantz on the Mediterranean Hyères Islands, Frioul Archipelago and Bendor Island near Bandol (France), all of which were deposited at the NHM. We have not examined these specimens to check their identification but there are few identification uncertainties and their initial identifications by Lantz are most likely correct.

## Results

### 1. The NHM specimens of Louis Amédée Lantz

In the specimen list below we provide name and collection locality indicated in the catalogue. Actual valid names and actual collection locality, if different from the NHM catalogue, are added in brackets. The number of specimens is indicated in parentheses. In many cases labels and catalogues were handwritten and difficult to read, thus explaining numerous errors in transcription that we have corrected wherever possible. The list is complete and includes all the NHM registered specimens donated and/or collected by L.A. Lantz. Jars containing specimens that could not be physically retrieved from the shelves at this time are indicated as 'not present' whilst those which were found are indicated as 'present'.

#### Africa

**Ghana:** **Lacertilia**—**Agamidae**: *Agama agama* (Linnæus) (1), “Gold Coast” ([Ghana]; ‘Nsuta, Gold Coast’ on jar and written on inside loose label): BMNH 1947.1.4.95 (present; most likely obtained by Lantz from a friend/colleague who visited the country or from a pet shop).

**Libya:** **Lacertilia**—**Scincidae**: *Chalcides ocellatus* (Forsskål) (2), Benghazi, Cirenaica: BMNH 1947.1.5.6–7 (present; no date).

**Morocco:** **Anura**—**Discoglossidae**: *Discoglossus pictus pictus* (Otth) (2 in two separate jars 319 and 320), Azrou?, Fez: BMNH 1951.1.6.3–4 (present; coll. O. Cyrén). **Lacertilia**—**Anguinae**: *Ophisaurus koellikeri* [*Hyalosaurus koellikeri* (Günther)] (1), Ifrane, Middle-Atlas, elev. 1550 m: BMNH 1947.1.4.96 (present). **Lacertidae**: *Acanthodactylus erythrurus lineomaculatus* (A.M.C. Duméril & Bibron) (4), Tangier: BMNH 1966.427–430 (present; 28 September 1935). **Phyllodactylidae**: *Tarentola mauritanica* (Linnæus) (1), Tangier: BMNH 1947.1.4.92 (present). **Scincidae**: *Eumeces algerienses* [*Eumeces algeriensis* Peters] (1), Casablanca: BMNH 1933.3.11.1 (present). **Serpentes**—**Colubridae**: *Macroprotodon cucullatus* (1) [*Macroprotodon* sp., species level identification to be confirmed], Casablanca: BMNH 1931.8.7.21 (present). **Psammophiidae**: *Malpolon monspessulanus* (Hermann) (1), Casablanca: BMNH 1931.8.7.22 (present).

**Tanzania:** **Lacertilia**—**Lacertidae**: *Latastia longicaudata* (Reuss) (2), Mtalisi, Mkalama, Tanganyika: BMNH

1965.500–501 (present; coll. by Arthur Loveridge (1891–1980) from Museum of Comparative Zoology, Harvard University and most likely obtained through exchange by Lantz).

**Tunisia: Anura**—*Discoglossidae*: *Discoglossus pictus* (1), Tunis: BMNH 1951.1.6.16 (present; leg. General Berquet; bred in captivity). **Lacertilia**—*Gekkonidae*: *Stenodactylus sthenodactylus* (Lichtenstein) (3), Djerba [Djerba Island]: BMNH 1947.1.4.62–64 (present). *Lacertidae*: *Acanthodactylus boskianus asper* (Audouin) (3), Gabes: BMNH 1966.423–425 (present; coll. General Berquet; 20 April 1934); *Acanthodactylus savignyi blanci* [*Acanthodactylus blanci* Doumergue] (3), Gamarth [Gammarth]: BMNH 1965.496–497 (present; 1<sup>st</sup> March 1934); (1), Gamarth [Gammarth]: BMNH 1966.426 (present; 1934); *Lacerta hispanica vaucheri* [*Podarcis vaucheri* (Boulenger)] (10), Dougga: BMNH 1965.413–422 (present; coll. General Berquet; 7 November 1934); *Lacerta pater* [*Timon pater* (Lataste)] (5), Tunis: BMNH 1965.484–488 (present; 21 May 1934; BMNH 1965.485–488 respectively 1452–1454a of Lantz); (6), bred in captivity, parents from Tunisia dated 1940: BMNH 1965.489–494 (present); *Ophisops occidentalis* Boulenger (4), only Tunisia indicated: BMNH 1966.816–821 (present; one removed for alizarin preparation; 11 April 1934); *Psammodromus algirus* (Linnaeus) (2), Ruins of Dougga: BMNH 1965.498–499 (present; 4 November 1934; field tags 1468–1469). *Scincidae*: *Chalcides chalcides* (Linnaeus) (4), City of Tunis: BMNH 1947.1.5.1–4 (present); *Chalcides ocellatus* (1), Hammamet: BMNH 1947.1.5.5 (present); *Mabuya vittata* [*Heremites vittatus* (Olivier)] (1), Bon Chema [?] near Gabes: BMNH 1947.1.4.98 (present).

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**Abkhazia: Lacertilia**—*Lacertidae*: *Lacerta agilis grusinica* Peters (1), Caucasus, Sukhumi [Sukhum, Black Sea coast]: BMNH 1965.345 (present; Lantz field tag 163R); (1), Bugat, Vale du Kador, Sukhumi, Caucasus [Bagad, near Sukhum]: BMNH 1965.346 (present; Lantz field tag 167R); *Lacerta derjugini* [*Darevskia derjugini* (Nikolsky)] (1), Lasotshka, near Sukhum, Transcaucasia, 400 m [Yashtkhua, near Sukhum]: BMNH 1918.11.21.1 (present); *Lacerta muralis saxicola* [*Darevskia brauneri* (Méhely)] (1), Lasotshka, near Sucham [Yashtkhua, near Sukhum]: BMNH 1918.11.21.9 (present); *Lacerta saxicola brauneri* [*Darevskia brauneri*] (2), Gagry, Caucasus [Abkhazia]: BMNH 1928.12.8.861–862 (present). **Serpentes**—*Colubridae*: *Natrix natrix* (Linnaeus) (1), Bogst, Kodor valley or Sukhum, Georgia [Bagad, near Sukhum]: BMNH 1947.1.5.12 (present); (1), Kodor Valley, near Sukhum, Georgia: BMNH 1947.1.5.13 (present).

**Azerbaijan: Lacertilia**—*Lacertidae*: *Eremias strauchi* Kessler (1), Djulfa, Armenia [Julfa, Nakhchivan Autonomous Republic, Azerbaijan]: BMNH 1965.495 (present; Lantz field tag 505R); *Lacerta brandtii* [*Iranolacerta brandtii* (De Filippi)] (1), Rasano, Talysch Mts [Talysh Mountains], Persia/USSR border: BMNH 1973.3492<sup>2</sup> (present; no date in catalogue but specimen referred to Lantz field tag 531R; Fig. 1); *Lacerta strigata* Eichwald (1), Khaldon, Ierlaka, Transcaucasia [Khaldan, vicinity of Yevlakh]: BMNH 1965.430 (present; Lantz field tag 159R, female, 25 April 1910); (4), Leukoran, Azerbaijan [Lankaran]: BMNH 1965.434–437 (present; respectively Lantz field tags 183R, 185R, 187R and 188R; 23 March 1912).

**Bulgaria: Lacertilia**—*Lacertidae*: *Lacerta trilineata* [*L. t. dobrogica* Fuhr & Mertens] (2), Sristor [Svistov, a locality where the German collector Fritz Fuß collected numerous specimens for the Zoologische Staatssammlung München (ZSM). It is not likely that L. Müller collected the material himself in Bulgaria; pers. comm. anonymous reviewer]: BMNH 1965.457–458 (present; Lorenz Müller, 25 May 1935).

**Croatia: Anura**—*Ranidae*: *Rana dalmatina* Fitzinger in Bonaparte (2), Zara [Zadar], Dalmatia: BMNH 1951.1.5.58–59 (present); *Rana ridibunda* [*Pelophylax ridibundus* (Pallas)] (1), Zara [Zadar], Dalmatia: BMNH 1951.1.5.63 (not present). **Lacertilia**—*Anguidae*: *Ophisaurus apodus* [*Pseudopus apodus* (Pallas)] (1), Zara [Zadar], Dalmatia: BMNH 1947.1.4.97 (present). *Lacertidae*: *Lacerta oxycephala* [*Dalmatolacerta oxycephala* (A.M.C. Duméril & Bibron)] (5): BMNH 1965.355–359<sup>3</sup> (present; in two separate jars, BMNH 1965.355–358 from Klis, near Split, Dalmatia, coll. O. Cyrén (respectively Lantz field tags 1497R, 1514R, 1508–1509R) and BMNH 1965.359 (Lantz field tag 1173R) young bred in captivity from a female from Split, Dalmatia); *Lacerta sicula campestris* [*Podarcis siculus campestris* (De Betta)] (8), Zara [Zadar]: BMNH

2 This is an extremely valuable discovery. It had been believed that the species was found only once in Azerbaijan by Hans Leder in the same area, the neighborhood of the village of Rasano (= Rosano, Rozanu, Rozabow, Rozanovo), Zuvand in June 1880 (see Boettger 1886; Alekperov 1978).

3 Note that BMNH 1965.351–353 are indicated as *Lacerta agilis exigua* and BMNH 1965.354 as *L. a. agilis* in catalogues! However, only *L. a. argus* (Laurenti) and *L. a. bosnica* Schreiber are present in that area. Subspecific identification has to be checked.



1965.360–367 (present; April 1932); (15), Zara [Zadar]: BMNH 1965.368–382 (present; 18 April 1932); (4), bred in captivity, parents from Nona near Zara [Zadar]: BMNH 1965.383–392 (present); *Lacerta trilineata trilineata* Bedriaga (5), Zara [Zadar], Dalmatia: BMNH 1965.440–444 (present except BMNH 1965.444 missing; 1933); (5), Zara [Zadar], Dalmatia: BMNH 1965.445–449 (present); (5), Zara [Zadar], Dalmatia: BMNH 1965.450–454 (present; probably captive-bred since registers indicate “parents from Zara”).



**FIGURE 1.** *Iranolacerta brandtii*, BMNH 1973.3492. Scale: one square side = 1 cm.

**France: Anura—Alytidae:** *Alytes obstetricans* (Laurenti) (3), Saint-Julien [Saint-Julien-les-Villas], Department of Aube: BMNH 1947.1.3.97–99 (not present). **Bombinatoridae:** *Bombina variegata* (Linnæus) (2), La Loge aux Chèvres, Forêt du Grand-Orient [Department of Aude]: BMNH 1947.1.4.1–2 (not present). **Discoglossidae:** *Discoglossus sardus* Tschudi in Otth (5), Hyères Islands, Port-Cros Island: BMNH 1931.8.7.13–17 (only BMNH 1931.8.7.13–14 present, BMNH 1931.8.7.15–17 exchanged in 1947); (2), Hyères Islands, Port-Cros Island: BMNH 1951.1.5.82–83 (10 June 1939; only one specimen present, BMNH 1951.1.5.82 exchanged with Robert Inger at FMNH); (2), Aitone Forest, Evisa, Corsica: BMNH 1951.1.5.84–85 (present; BMNH 1951.1.5.84, 26 May 1934, Lantz number n° 15, died 8 June 1946 and coll. J. Armitage; BMNH 1951.1.5.85, 3 September 1934); (1), Port-Cros Island, Var [Department of Var]: BMNH 1951.1.5.86 (not present); (2), Hyères Islands, Port-Cros Island: BMNH 1951.1.5.87–88 (present; 10 June 1939, coll.? Maxwell Savage); (2), Hyères Islands, Port-Cros Island: BMNH 1951.1.5.89–90 (BMNH 1951.1.5.89 (present) was collected 10 June 1939 and died 21 April 1946 [Lantz n° 25], BMNH 1955.1.5.90 was exchanged with W.E. Duellman, Univ. Kansas in 1970); (5), Hyères Islands, Port-Cros Island: BMNH 1951.1.5.91–95 (present; 10 April 1931); (3), Hyères Islands, Levant Island: BMNH 1951.1.5.97–99 (present; 11 April 1931); (1), Hyères Islands, Levant Island: BMNH 1951.1.6.1 (not present; 11 April 1931). **Hylidae:** *Hyla arborea meridionalis* [*Hyla meridionalis* Boettger] (1), Hyères Islands, Porquerolles Island: BMNH 1947.1.3.96 (present). **Pelobatidae:** *Pelobates cultripes* (Cuvier) (2), Trejos, Department of Var [Trejos could be the collector name? We found no locality with that name]: BMNH 1947.1.3.94–95 (not present; one specimen exchanged with I.S. Darevsky in 1981). **Ranidae:** *Rana dalmatina* (3), Fréjus, Var, France: BMNH 1951.1.5.48–50 (present); (1), Meudon Forest (Department of Seine-et-Marne): BMNH 1951.1.5.51 (present); (1), Forêt de Rumilly, Department of Aube, France: BMNH 1951.1.5.52; *Rana ridibunda* [*Pelophylax ridibundus*] (3), Forêt du Dom,

near Bormes, Var [Domanial Forest, Bormes-les-Mimosas, Department of Var]: BMNH 1951.1.5.60–62 (present); (1), City of Fréjus, Department of Var: BMNH 1951.1.5.64 (present); *Rana temporaria* (Linnæus) (8 in two jars), Bagnères-de-Bigorre [Department of Hautes-Pyrénées]: BMNH 1927.11.23.1–6 (6; present) and BMNH 1951.1.5.65–66 (2 specimens but only one present); (3), Plan de Cayan (Carjans?), 1600 m, Department of Hautes-Pyrénées: BMNH 1951.1.5.41–43 (present); (2), Grip, 1600 m, Department of Hautes-Pyrénées: BMNH 1951.1.5.44–45 (present); (1), Lac de Cambales, 1600 m, Department of Hautes-Pyrénées: BMNH 1951.1.5.46 (present); (1), Cauterets, 1600 m, Department of Hautes-Pyrénées: BMNH 1951.1.5.47 (not present); (2), Bagnères-de-Bigorre, Department of Hautes-Pyrénées: BMNH 1951.1.5.65–66 (not present). **Urodela—Plethodontidae:** *Hydromantes italicus* [*Speleomantes italicus* (Dunn)] (1), Department of Alpes-Maritimes, near Saint-Martin-Vésubie, Turine forest [Saint-Martin-Vésubie, Turini Forest]: BMNH 1936.10.6.2 (present; June 1926). **Salamandridae:** *Euproctus asper* [*Calotriton asper* (Dugès)] (7), Department of Hautes-Pyrénées, near Bagnères-de-Bigorre, Torrent de Castelmouly: BMNH 1928.11.22.15–16 (present), 1928.11.22.18–22 (present) [all entered as «topotypes» for the undescribed subspecies but named in register “*E. asper castelmouliensis*”]; (1), Department of Hautes-Pyrénées, Cirque of Troumouse, elev. 2050 m: BMNH 1931.8.7.2 (present); (1), Hautes-Pyrénées, north of Ormielas, La Sagette, elev. 1700 m [Department of Pyrénées-Atlantiques, col de la Sagette]: BMNH 1931.8.7.3 (present); (1), Hautes-Pyrénées, Lac d’Oncet [Department of Hautes-Pyrénées]: BMNH 1931.8.7.4 (present); (1), Hautes-Pyrénées, Lac d’Oncet, elev. 2230 m [Department of Hautes-Pyrénées, around col du Tourmalet]: BMNH 1951.1.5.71 (present); *Euproctus montanus* [*Pseudotriton montanus* (Savi)] (3), Corsica, Fontaine de Brusco near Corte, Tavignano Valley, elev. 960 m [Department of Haute-Corse]: BMNH 1947.1.4.8–10 (present); *Salamandra salamandra corsica* [*Salamandra corsica* (Savi)] (1), Corsica, near Corte, Tavignano Valley, elev. 900 m [Department of Haute-Corse]: BMNH 1947.1.4.18 (present); (1), Corsica, Evisa [Department of Corse-du-Sud]: BMNH 1947.1.4.19 (present); (1), Corsica, Vizzavona [Department of Haute-Corse], captive bred: BMNH 1947.1.4.20 (present); (8), captive bred [Corsica, no further details for locality]: BMNH 1947.1.4.21–28 (not present); *Salamandra salamandra fastuosa* Schreiber (2), Cardinquere near Cauterets, Pyrénées, elev. 1865–2000 m (indicated as «highest altitude recorded») [Department of Hautes-Pyrénées, Cardinquère near Cauterets which is a mountain thermal station]: BMNH 1928.11.22.1–2 (present, entered as ‘topotypes’ of *S. s. terrestris*); (3), Department of Hautes-Pyrénées, Bedut near Bagnères-de-Bigorre: BMNH 1947.1.4.11–14 (present); *Salamandra salamandra terrestris* (Lacépède) (1), Department of Hautes-Pyrénées, Col du Tourmalet, elev. 2000 m: BMNH 1931.8.7.1 (present); (1), Dom Forest, Var [most likely Domanial Forest, Department of Var]: BMNH 1947.1.4.30 (present); *Triturus alpestris apuanus* [*Ichthyosaura alpestris* (Laurenti)] (1), Department of Aube, Forêt du Grand-Orient: BMNH 1947.1.4.41 (present); *Triturus blasii* Woltorstorff, 1903; (3), Argenton, Indre [Argenton-sur-Creuse, Department of Indre]: BMNH 1928.11.22.3–5 (present); *Triturus helveticus* [*Lissotriton helveticus* (Razoumovsky)] (2), Department of Aube, Forêt du Grand-Orient: BMNH 1947.1.4.48–49 (present); (1), Saint-Julien [Saint-Julien-les-Villas near Troyes, Department of Aube]: BMNH 1947.1.4.50 (present); *Triturus vulgaris* [*Lissotriton vulgaris* (Linnæus)] (4), Aube, near Troyes, Le Garret [Department of Aube]: BMNH 1947.1.4.37–40 (present). **Lacertilia—Gekkonidae:** *Hemidactylus turcicus* (Linnæus) (3), Department of Var, Hyères Islands, Port-Cros Island: BMNH 1947.1.4.65–67 (present); (1), Department of Var, Hyères Islands, Levant Island: BMNH 1947.1.4.68 (present); (2), Department of Var, city of Hyères: BMNH 1947.1.4.69–70 (present). **Lacertidae:** *Lacerta agilis agilis* Linnæus (1), Fontainebleau, Department of Seine-et-Marne: BMNH 1965.354 (present); (1), Villefranche, Department of Rhône [Villefranche-sur-Saône]: BMNH 1965.513 (present; Lantz field tag 1020R); *Lacerta lepida lepida* [*Timon lepidus* (Daudin)] (1), Hyères, Var [City of Hyères, Department of Var]: BMNH 1965.466 (present; Lantz field tag 1431R); (2), Perquerolles [Porquerolles Island, Hyères Islands]: BMNH 1965.467–468 (present; Lantz field tags 1430R and 1478R); (1), Plage de Fréjus, Department of Var: BMNH 1965.469 (present; Lantz field tag 1531R); (1), bred in captivity, parents from Marseille: BMNH 1965.470 (present; Lantz field tag 1434R); (2), Saint-Raphaël, Department of Var: BMNH 1965.471–472 (present; Lantz field tags 1432–1433R; 1931); (8), Saint-Raphaël, Department of Var: BMNH 1965.473–480 (present; embryos, bred in captivity, male from Saint-Raphaël and female from Marseille); (3), bred in captivity, parents from Saint-Raphaël, Department of Var: BMNH 1965.481–483 (present; Lantz field tags 1460–1462R); (1), Saint-Raphaël, Department of Var: BMNH 1966.466 (present; 1938; bred by R. Guillon); *Lacerta monticola bonnali* [*Iberolacerta bonnali* (Lantz)] (19): BMNH 1946.9.1.19–22 (4 specimens indicated as para-



types but no paratypes were designated in the original description; original registration number BMNH 1927.11.23.31–34; present), BMNH 1947.1.1.19 (indicated as “type” in registers without any precision but no holotype designated in the original description series; present; 20 June 1922; this specimen was designated as lectotype by Ineich *et al.* 2017), BMNH 1966.472–485 (14 additional specimens given after Lantz’s death and most likely originating from the type-series of 17 specimens and from Lantz’s breeding of that species; Lac Bleu de Bigorre, Pyrénées; see discussion about type status in Ineich *et al.* 2017); (1), Col du Rabiet, Hautes-Pyrénées, 2000 m: BMNH 1966.472 (present; female, July 1925; specimen in jar is labelled BMNH 1966.476?); (3), Lac Bleu de Bigorre, Hautes-Pyrénées: BMNH 1966.473–475<sup>4</sup> (present); (1), Lac de Maucapera, Hautes-Pyrénées, 2500 m: BMNH 1966.476 (present; leg de Bonnal; female, July 1929); (2), Lac Bleu de Bigorre, Hautes-Pyrénées [no locality in catalogue]: BMNH 1966.477–478 (present; 2 females); (1), Caderolles, Hautes-Pyrénées: BMNH 1966.479 (present; 1932); (1): Iron de? du Lac Bleu: BMNH 1966.480 (present; 15 September 1926); “Egg with *L. m. bonnali*—no details”: BMNH 1966.481 (present; 21 June 1925); (4), Lac Bleu de Bigorre, Hautes-Pyrénées: BMNH 1966.482–485 (present; leg de Bonnal); *Lacerta muralis muralis* [*Podarcis muralis* ssp.] [there should be 88 specimens from Lantz all together: BMNH 1966.550–608, 1966.614–642] (3), Saint-Raphaël, Department of Var: BMNH 1966.581–583 (present; March–April 1932)<sup>5</sup>; (10), Islet Lion-de-Mer, Saint-Raphaël, Department of Var: BMNH 1966.599–608 (present; 10 August 1934); (27), same as above: BMNH 1966.550–576 (present; 23 April 1933); (4), Rocher de Conchue, près de Marseille [referred today to as Grand and Petit Congloué, Riou Archipelago, Marseille, Department of Bouches-du-Rhône]: BMNH 1966.577–580 (present; leg M. Mourgue, September 1923); (15), City of Fréjus, Department of Var: BMNH 1966.584–598 (present); (2), Cannes, Department of Alpes-Maritimes: BMNH 1966.614–615 (present; May 1920 and 1924); (2), Agay [near Saint-Raphaël]: BMNH 1966.616–617 (present; 1920 and 1921); (3), Fréjus, Department of Var: BMNH 1966.618–620 (present; 24–31 March 1932); (14), Ile de Baudol, France [Bandol Island, Department of Bouches-du-Rhône]: BMNH 1966.621–627, 1966.630–636 (present; 24 April 1933); (2), Iles de Pomègue et Ratonneau près de Marseille [Pomègues and Ratonneau Islands, Frioul Archipelago]: BMNH 1966.628–629 (present; leg. M. Mourgue; 1923); (6), Iles Grand Gaou, Les Embiez (Var) [Grand Gaou Island, Embiez Archipelago, Department of Var]: BMNH 1966.637–642 (not present; 17 April 1933); (5), Ratonneau Island, Marseille [Ratonneau Island, Frioul Archipelago; 30 April 1933]: BMNH 1966.643–647 (present; 30 April 1933); (6), Ile de Baudol, France [Bandol Island, Department of Bouches-du-Rhône]: BMNH 1966.648–653 (present; 24 April 1933); (3), Île Rouse de Baudol [île Rousse, Bandol]: BMNH 1966.654–656 (present; 24 April 1933); (3), Islands of Pomègues and Ratonneau in the bay of Marseille [Pomègues and Ratonneau Islands, Frioul Archipelago]: BMNH 1966.657–659 (present; in two separate jars; leg. M. Mourgue; September 1923); (5), Hyères Islands, Port-Cros Island: BMNH 1966.660–664 (present; 10 June 1939); (20) Hyères Islands, Port-Cros Island: BMNH 1966.665–684 (present; 10 April 1931 or 5–7 April 1932); (7), Ile du Levant [Hyères Islands, Levant Island, Department of Var]: BMNH 1966.685–691 (present; 24 April 1933); (12), Hyères Islands, Port-Cros Island: BMNH 1966.692–695 (present; 24 November 1933), BMNH 1966.700–703 (present; 24 November 1933), BMNH 1966.704–707 (present; no date); (1), Îlot de Rascas, Port-Cros, Var [Department of Var, Hyères Islands, Rascas Rock, north of Port-Cros Island]: BMNH 1966.708 (present; 27 April 1933; Fig. 2); (4), Bagaud Island<sup>6</sup>, Hyères Islands, Department of Var: BMNH 1966.696–699 (present; 24 April 1935); (3), Le Croisie, Loire Inf., France [Le Croisic, Department of Loire-Atlantique]: BMNH 1966.709–711 (present; 2 July 1927); (3), Forest of Fontainebleau [Department of Seine-et-Marne]: BMNH 1966.712–714 (present; 21 August 1934 and 1966.714 1935); (11), Ile de Parquerolles, France [Hyères Islands, Porquerolles Island, Department of Var]: BMNH 1966.715–725 (present; 8–10 April 1933); (9), City of Hyères, Department of Var: BMNH 1966.724–734 (present; 13 April 1933); (2), Les Pesquiers near Hyères, Department of Var: BMNH 1966.735–736 (present; April 1933); *Lacerta muralis quadrilineata* [*Podarcis tiliguerta*] (9), Corsica, Fort d’Aitone, Evisa [Aitone, Evisa]: BMNH 1966.486–493 (present; 3–6 September 1937); (13), La Spelunca, près Evisa, Corse [La Spelunca near Evisa, Corsica; 2 September 1937]: BMNH 1966.503–515

4 BMNH 1966.473, female, June 1931; 1966.474, female, 8 July 1926; 1966.475, female, June 1931.

5 BMNH 1966.550–576 23 April 1935; 1966.577–580 September 1923 male?; 1966.581–582 31 March 1932 male 2 April 1932; 1966.583 23 April 1933; 1966.584–598 24–31 March 1922; 1966.599–608 10 August 1934; 1966.614–615 11 May 1920 deceased 1924; 1966.616–617 male female 9 May 1920 and 18 September 1921; 1966.618–620 24 and 31 March 1932; 1966.621–627 24 March 1933; 1966.628–629 September 1923; 1966.630–636 24 April 1933.

6 Occurrence on Bagaud Island recently confirmed by Paquier *et al.* (2017).

(present; 2 September 1937); (8), Corsica? [no precise location]: BMNH 1966.494–502 (not present); (2), Île Rousse, Cure, sur la côte [Rousse Island, Thermal station, on sea border, Corsica]: BMNH 1966.516–517 (not present; March 1937); (3), Île Rousse, Corse, sur les îles, vers le phare [Rousse Island, Corsica, on the islands, not far from the headlight]: BMNH 1966.518–520 (not present; 28 August 1937); (1), Serra di Mezzo near Corte, elev. 900–1000 m: BMNH 1966.745 (present; 10 October 1923); (2), Corte: BMNH 1966.746–747 (present; August 1924); (4), BMNH 1966.748–751 (present; BMNH 1966.748–749, born in captivity in 1921 from a female of Piana, Corsica; BMNH 1966.750–751, born in captivity from another female from Vizzavona in Corsica; acquisition date 17–18 August 1923 died 23–24 August 1923); *Lacerta tiliguerta* [*Podarcis tiliguerta*] (9), Piana: BMNH 1966.494–502 (not present; 30 August to 2 September 1937); *Lacerta viridis viridis* [*Lacerta bilineata* Daudin] (2), Carnac, Department of Morbihan: BMNH 1965.459–460 (present); *Lacerta vivipara* [*Zootoca vivipara* (Lichtenstein)] (3), Gerde, Department of Hautes-Pyrénées: BMNH 1932.1.2.1–3 (present; 3 young with vitellus); (1), Gerde, Hautes-Pyrénées, France: BMNH 1966.809 (present; 14 eggs and 4 young—Lantz indicated 17 eggs and freshly hatched juveniles in catalogue; 3 September 1924); (2 and eggs), Lac Bleu near Bagnères-de-Bigorre, Hautes-Pyrénées, elev. 1968 m: BMNH 1966.807 (leg de Bonnal; female) and 1966.808 (13 July 1925 and juvenile, 27 August 1925); *Podarcis sicula campestris* [*Podarcis siculus campestris*] (12), Ile du Château d’If, près de Marseille [Château d’If Island, near Marseille, Department of Bouches-du-Rhône]: BMNH 1966.774–779 (present; 10 April 1932); (6), Ile du Château d’If, près de Marseille [Château d’If Island, near Marseille, Department of Bouches-du-Rhône]: BMNH 1966.780–785 (not present; 10 April 1932); (6), Ile du Château d’If, près de Marseille [Château d’If Island, near Marseille, Department of Bouches-du-Rhône]: BMNH 1966.786–790 (present; 10 April 1932 and 20 August 1934); (5), Île du Château d’If, près de Marseille [Château d’If Island, near Marseille, Department of Bouches-du-Rhône]: BMNH 1966.791–795 (present; 14 September 1923, leg M. Mourgues); (8), Corsica [no precise location]: BMNH 1966.796–803 (present; several dates in registers: 12 October 1923, 17 May 1937, Calvin June 1937, Corbara 27 August 1937). **Scincidae**: *Chalcides chalcides striatus* [*Chalcides striatus* (Cuvier)] (1), Pegomas, Department of Alpes-Maritimes: BMNH 1947.1.4.99 (present). **Phyllodactylidae**: *Tarentola mauritanica* (2), Department of Var, city of Fréjus: BMNH 1947.1.4.89–90 (present). **Sphaerodactylidae**: *Phyllodactylus europaeus* [*Euleptes europaea* (Gené)] (8 in two jars), Department of Var, Hyères Islands, Port-Cros Island: BMNH 1931.8.7.18–19 (present), BMNH 1947.1.4.75–80 (present); (3), Department of Var, Hyères Islands, Levant Island: BMNH 1947.1.4.71–73 (present); (1), Department of Var, Hyères Islands, Port-Cros Island: BMNH 1947.1.4.74 (present); (1), Var, îlot de Rascas [Department of Var, Hyères Islands, Rascas Rock, north of Port-Cros Island; Fig. 3]<sup>7</sup>: BMNH 1947.1.4.81 (present; Fig. 4); (2), Bagaud Island<sup>8</sup> [Department of Var, Hyères Islands]: BMNH 1947.1.4.82–83 (present; alizarin preparation); (2), Var, Bendre Island [Department of Var, Bendor Island off the city of Bandol; sometimes erroneously called Bandol Island]: BMNH 1947.1.4.84–85 (present); (3), Bouches-du-Rhône, îlot de Tiboulén, near Isle de Ratonneau (written Portonneau by mistake) [Department of Bouches-du-Rhône, Frioul Archipelago, Tiboulén-du-Frioul Island also called Tiboulén Islet, in front of the city of Marseille]: BMNH 1947.1.4.86–88 (present). **Serpentes—Colubridae**: *Coluber viridiflavus* [*Hierophis viridiflavus* (Lacepède)] (1), eastern France: BMNH 1966.521 (present; 1<sup>st</sup> September 1966, date of acquisition); *Elaphe scalaris* [*Zamenis scalaris*<sup>9</sup> (Schinz)] (1), Department of Var, Hyères Islands, Levant Island<sup>10</sup>: BMNH 1933.3.11.3 (present). **Natricidae**: *Natrix maura* (Linnæus) (1), Department of Var, Hyères Islands, Levant Island: BMNH 1931.8.7.20 (present); (1 as *Natrix viperina*, a synonym), Department of Var, near the city of Hyères, Les Pesquiers: BMNH 1933.3.11.2 (present); (3), Saint-Julien-les-Villas, Department of Aube: BMNH 1947.1.5.9–11 (present); (4 as *Natrix viperina*), Department of Var, city of Saint-Raphael: BMNH 1947.1.5.14–17 (present, two juveniles and two eggs). **Psammophiidae**: *Malpolon monspessulanus* (Hermann); (1), Department of Var, Hyères Islands, Porquerolles Island: BMNH 1931.8.7.23 (present)<sup>11</sup>. **Viperidae**: *Vipera aspis* [*Vipera aspis zinnikeri* Kramer] (1), Lac d’Ileou, Hautes Pyrénées [Ilhéou Lake, Cauterets Valley, Department of Hautes-Pyrénées, elev. 1976 m]: BMNH 1931.8.7.24 (present).

7 This species was later reported from this very small islet by Delaugerre & Dubois (1985).

8 Occurrence on Bagaud Island was recently confirmed by Paquier *et al.* (2017).

9 We here follow Salvi *et al.* (2018) in considering *Rhinechis scalaris* Schinz as a member of the genus *Zamenis* Wagler.

10 Occurrence of the species on Bagaud Island was reported by Knoepffler (1973) but not confirmed in recent surveys (Paquier *et al.* 2017).

11 Occurrence of the species on Bagaud Island was recently reported by Paquier *et al.* (2017).





**FIGURE 2.** *Podarcis muralis*. This specimen (BMNH 1966.708) was collected by L.A. Lantz (27 April 1933) on Rascas Rock, a very small island north of Port-Cros Island, France.



**FIGURE 3.** Rascas Islet was visited by L.A. Lantz in April 1931. That islet is located 170 meters from Port-Cros Island in the Hyères Islands Archipelago (also sometimes called the Porquerolles Islands). It is one of the smallest Mediterranean islets (0.45 ha) and is host to two species of lizard; the European Leaf-toed Gecko (*Euleptes europaea*) and the Wall Lizard (*Podarcis muralis* (Laurenti)). Lantz collected five Wall lizards and one European Leaf-toed Gecko but they were never published (Lantz 1931).

**Georgia: Lacertilia—Lacertidae:** *Lacerta agilis grusinica* (2), Batoum [Batoumi, Autonomous Republic of Adjara]: BMNH 1965.343–344 (present); *Lacerta derjugini* [*Darevskia derjugini*] (1), Lagodekhi, N. Kahletie, Transcaspia [Lagodekhi, Kakheti]: BMNH 1918.11.21.2 (present); (1), Banis Tokhevi Valley [Banis-Tskhevi (= Bonis-Hevi) river valley], Borjom, Gov. Tiflis: BMNH 1918.11.21.3 (present; 27 May 1914); (1), Bakuriani, near Borjom, Gov. Tiflis, elev. 1200 m: BMNH 1918.11.21.4 (present); *Lacerta media* [*L. m. media* Lantz & Cyrén] (1), Tiflis: BMNH 1960.1.4.38 (Fig. 5) (syntype of *Lacerta viridis media* Lantz & Cyrén; present; Lantz field tag 158R; 19 April 1910); *Lacerta mixta* [*Darevskia mixta* (Méhely)] (1), Banis-Khevi Valley, Borjom, Tiflis [Banis-Tskhevi (= Bonis-Hevi) river valley, Tiflis Governorate]: BMNH 1918.11.21.8 (present); *Lacerta portschinskii* [*Darevskia rudis obscura* (Lantz & Cyrén); we do not follow Gabelaia *et al.* (2018) for specific status] (3), Borjom, Govt. Tiflis [Tiflis Governorate], elev. 800 m [*Darevskia portschinskii* does not occur in Borjomi]: BMNH 1918.11.21.5–7 (present; 28–30 May 1914; see Fig. 6; all three specimens are paralectotypes of *Lacerta saxicola obscura* Lantz & Cyrén, now *Darevskia rudis obscura*); *Lacerta rudis obscura* [*Darevskia rudis obscura*] (5), Parc de Bonjoue [Park of Borjomi?], Georgia: BMNH



1966.769–773 (present) [these specimens are paralectotypes of *Lacerta saxicola obscura* Lantz & Cyrén from Borjomi, collected by Lantz between 27 and 30 May 1914, dates given as analogous to other ZISP specimens (see Doronin 2017)]; *Lacerta saxicola caucasica* [*Darevskia caucasica caucasica* (Méhely)] (4), Gorges du Daryal, Road of Uil, Géorgienne, Caucase [Georgia]: BMNH 1966.763–766 (present; 30 January 1928, leg. G.F. Sukhov; see Fig. 7); *Lacerta strigata* (3), Mikhailovo, Borjoru, Caucasus [Khashuri, Georgia]: BMNH 1965.431–433 (present; 16 April 1910; respectively; Lantz field tags 153R, 150R and 155R respectively; female, male, and juvenile); *Lacerta trilineata media* [*L. m. media*] (1), Bortshka Vallée du Tshorokh, Batoum [Borcha village in the Chorokh river valley]: BMNH 1966.512<sup>12</sup> (syntype of *Lacerta viridis media* Lantz & Cyrén; present).

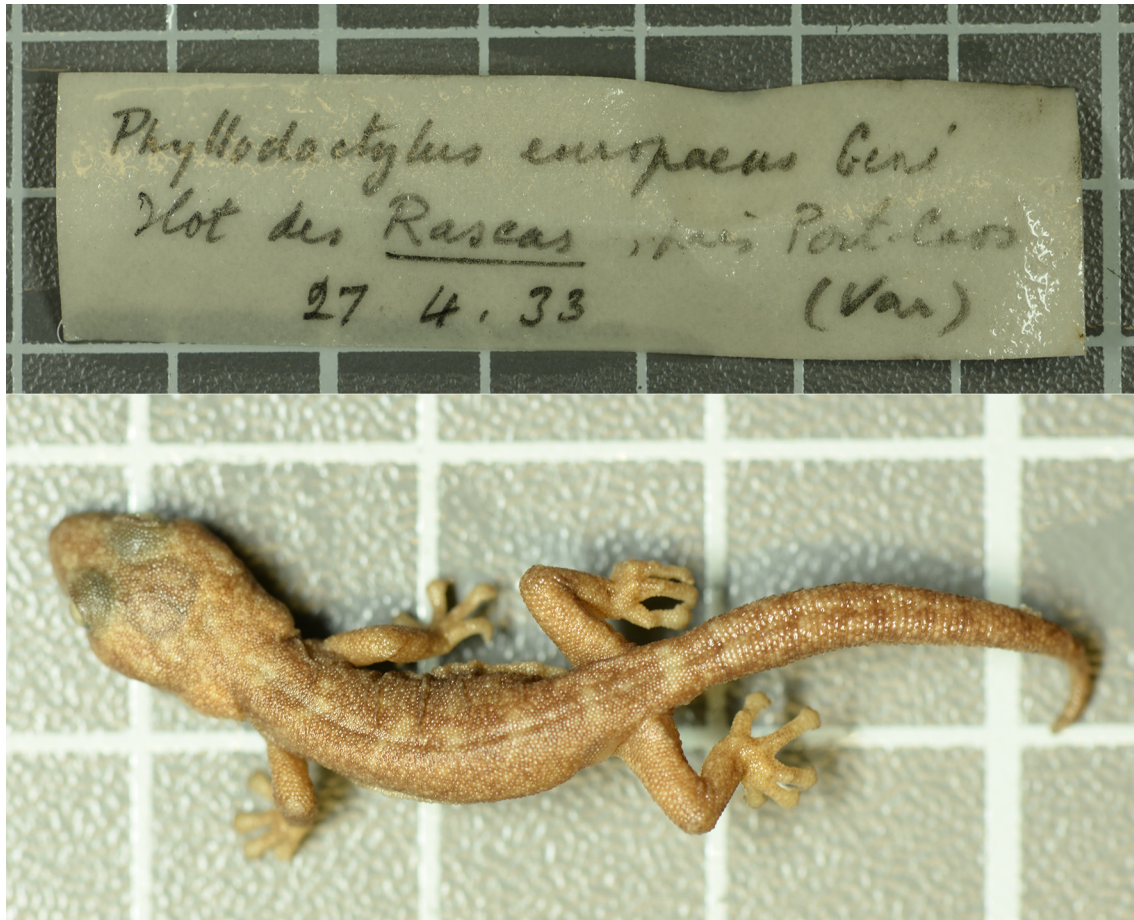


FIGURE 4. *Euleptes europaea* from Rascas Rock (BMNH 1947.1.4.81), tag (top view) and dorsal view of the specimen (bottom). Scale: one square side = 1 cm.

**Germany: Urodela—Salamandridae:** *Salamandra salamandra terrestris* Bonnaterre (1), Lachtelweiher near Kirchberg, Upper Rhine: BMNH 1947.1.4.29 (present); hybrid, *Triturus palmatus* [*Lissotriton helveticus*] (male) from Holzminden (on the Weser), Dukedom of Braunschweig, Germany x *Triturus vulgaris kapelanus* [*Lissotriton vulgaris meridionalis* (Boulenger)] (female) from Florence, Italy: BMNH 1928.11.22.24 (present).

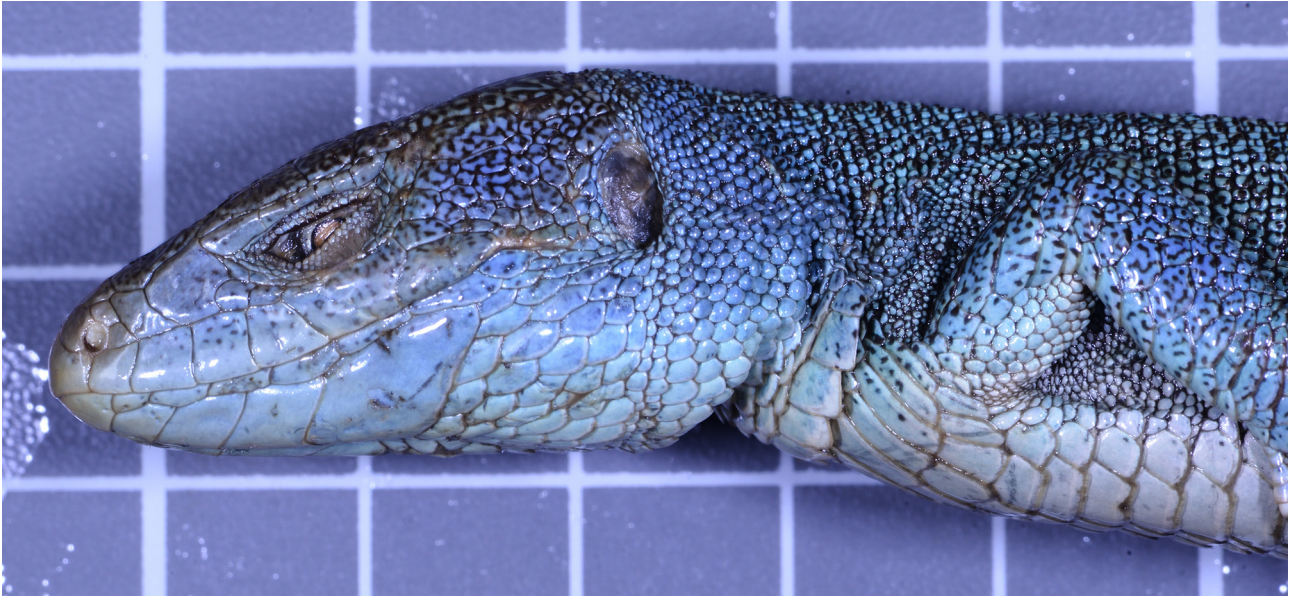
**Greece: Lacertilia—Lacertidae:** *Lacerta trilineata trilineata* (2), Corfu, Greece: BMNH 1965.438–439 (present; coll. Lorenz Müller).

**Hungary: Urodela—Salamandridae:** *Triturus cristatus danubialis* [*Triturus dobrogicus* (Kiritzescu)] (1), Budapest: BMNH 1928.11.22.9 (present).

**Italy: Anura—Discoglossidae:** *Discoglossus sardus* (1), Oristano, Sardinia: BMNH 1951.1.5.80 (present); (9), parents from Sardinia, bred in captivity: BMNH 1951.1.5.96 (present); (1), Lanusei, Sardinia: BMNH 1951.1.6.2 (present). **Urodela—Plethodontidae:** *Hydromantes genei italicus* [*Speleomantes italicus*] (5), near Genoa: BMNH 1947.1.4.32–36 (present). **Salamandridae:** *Euproctus platycephalus* (Gravenhorst) (1),

12 Not originally indicated as type in the BMNH catalogue.

between Tortoli and Lanusei, Sardinia: BMNH 1947.1.4.46 (present). **Lacertilia**—**Lacertidae**: *Podarcis muralis brueggemanni* [most likely *Podarcis muralis nigriventris* Bonaparte] (4), Santa Margherita, Liguria: BMNH 1966.737–740 (present; 1948); (4), Monte di Portofino: BMNH 1966.741–744 (present; June 1921 and March 1922); *Podarcis muralis muralis* (22), Islet of the Gabiniere, Port Ciro, Italy: BMNH 1966.528–549 (only 21 specimens present; 26 April 1933); *Podarcis sicula campestris* (3) [*P. siculus campestris*], Trient [Trento]: BMNH 1966.804–806 (present; August 1923 and May 1925).



**FIGURE 5.** Syntype of *Lacerta viridis media* (BMNH 1960.1.4.38), lateral view of head.

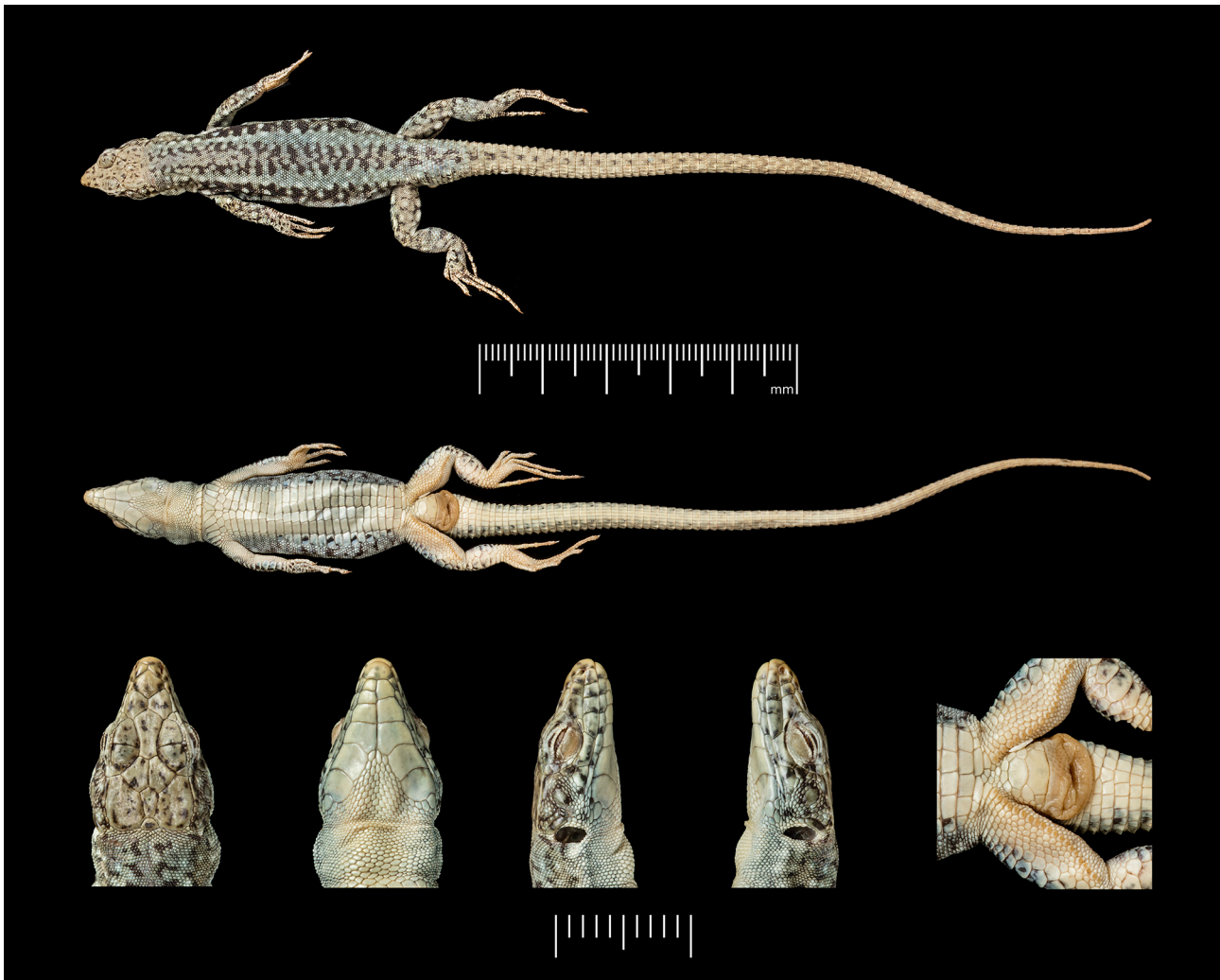
**Portugal: Anura**—**Discoglossidae**: *Discoglossus pictus* (2), Porto: BMNH 1951.1.6.13–14 (present; previously BMNH 1951.1.6.13–15 but individual BMNH 1951.1.6.15 now an alizarin stained specimen). **Ranidae**: *Rana iberica* Boulenger (1), Quintas: BMNH 1951.1.5.67–68 (not present). **Urodela**—**Salamandridae**: *Chioglossa lusitanica* (Bocage) (3), near Porto, Oliveira de Azemeis [Aveiro District, Oliveira de Azeméis]: BMNH 1936.10.6.3–5 (present); *Triturus boscai* [*Lissotriton boscai* (Lataste in Tourneville)] (1), Oliveira do Douro, Oporto [west of Porto, Porto District, sometimes called Vila Nova de Gaia]: BMNH 1947.1.4.43 (present); (4), Avintes, near Porto [Municipality of Vila Nova de Gaia]: BMNH 1947.1.4.44–47 (present); *Triturus helveticus sequeirai* [*Lissotriton helveticus*] (4), near Oporto [near Porto]: BMNH 1947.1.4.51–54 (present). **Lacertilia**—**Lacertidae**: *Lacerta hispanica* [*Podarcis bocagei* (Lopez-Seoane)] (2), around Porto: BMNH 1966.433–434 (present; 2 males; 1946); (4), around Porto: BMNH 1966.436–439 (present; hatchlings; 1935); (6), Azurara: BMNH 1966.448–453 (not present; 4 April 1935; from Gonçalrès [most likely the name of the person who gives the lizards to Lantz]); (5) Vila do Conde: BMNH 1966.454–458 (not present; leg Marherr; 4 April 1935); (4), Porto: BMNH 1966.461–464 (not present; from Gonçalvès (Gonçalrès?); 29 March 1935); *Lacerta schreiberi* Bedriaga (1), Mindelo, North Portugal: BMNH 1965.393 (present; juvenile; coll. 1935).

**Romania: Lacertilia**—**Lacertidae**: *Lacerta viridis viridis* [*Lacerta viridis meridionalis* Cyrén] (2), Banreasa, Bucharest: BMNH 1965.455–456 (present; respectively Lantz field tags 1379R and 1380R).

**Russia: Anura**—**Bombinatoridae**: *Bombina bombina* (Linnæus) (1), Simonorf [Simonovo] near Moscow: BMNH 1913.11.10.10 (not present). **Ranidae**: *Rana arvalis* Nilsson (6), Kozou Khovo [Shchyolkovo?] near Moscow: BMNH 1913.11.10.4–9 (present); *Rana temporaria* (3), Kliazma, Moscow: BMNH 1913.11.10.1–3 (present). **Urodela**—**Hynobiidae**: *Hynobius keyserlingi* [*Salamandrella keyserlingii* Dybowski] (1), Sverdlovsk [Yekaterinburg]: BMNH 1947.1.1.17 (present). **Lacertilia**—**Lacertidae**: *Lacerta agilis boemica* Sukhov (11), Caucasus, District of Ter. [Terek Oblast, now a territory of the Republic of North Ossetia-Alania], Vladikavkaz: BMNH 1960.1.4.26–30 (present; coll. G.F. Sukhov; 1928), 1965.337–342 (present; coll. G.F. Sukhov; 1<sup>st</sup> August 1928) (in two separate jars respectively BMNH 1965.337–339 and BMNH 340–342, all are syntypes of *Lacerta boemica* Sukhov; BMNH 1965.337–342 have respectively; Lantz field tags 1265–



1267R and 1277–1279R)<sup>13</sup> respectively; *Lacerta agilis exigua* Eichwald (3), Saratov: BMNH 1965.347–349 (present); (1), Caucasus, Novorossisk [Novorossiysk, Krasnodar Region]: BMNH 1965.350 (present); (3), Bolshaya, Polivanovka [Bol'shaya Polivanovka], Saratov [Region], Volga River: BMNH 1965.351–353 (present; respectively; Lantz field tags 1523R, 1526R and 1529R) respectively; *Lacerta media* [*L. m. media*] (1), Novorossiysk, N.W.Caucasus [Novorossiysk, Krasnodar Region, Russia] (syntype<sup>14</sup> of *Lacerta viridis media* Lantz & Cyrén): BMNH 1960.1.4.25 (present; 1908); *Lacerta saxicola brauneri* [*Darevskia brauneri*] (1), Sotchi, Vallée de l'Agura, Caucase [Krasnodar Region, Russia]: BMNH 1966.762 (present; 4 June 1929); *Lacerta saxicola saxicola* (14) [all rock lizards from Crimea are *Darevskia lindholmi* (Szczerbak); they cannot be part of the syntypes of *Lacerta saxicola obscura*; see Doronin 2017]: BMNH 1966.752–761, there are only 9 specimens present (5 specimens in lot 1966.752–756, 2 specimens in lot 1966.757–758, and 2 specimens in lot 1966.760–761, in three separate jars): BMNH 1966.752–756 (present; 1966.756 18 November 1920) with only Crimea as locality; BMNH 1966.757 (present; as *L. s. saxicola* in catalogue; 5 September 1913; leg W.R. Lindholm) from Tshufut-Kaleh [Chufut-Kale] near Bakhtshi-Sarai [Bakhchysarai], Crimea; BMNH 1966.758 (present; 5 September 1913; leg W.R. Lindholm) from Katchi-Kaleh [most likely Katchi-Kalyon] near Bakhtshi-Sarai [Bakhtchissarai, Crimea]; BMNH 1966.759 (1) from Aloupka, Crimea [Alupka in the Crimean Peninsula] (present; born 1916 died 1924?); BMNH 1966.760–761 (2) from Kizyl-Koba, mont Tchatyr-Dagh [Kizyl-Koba, Mont Tchatyr-Dagh, Crimea] (present; 3 September 1913).



**FIGURE 6.** One of the paralectotypes of *Lacerta saxicola obscura*, BMNH 1918.11.21.5.

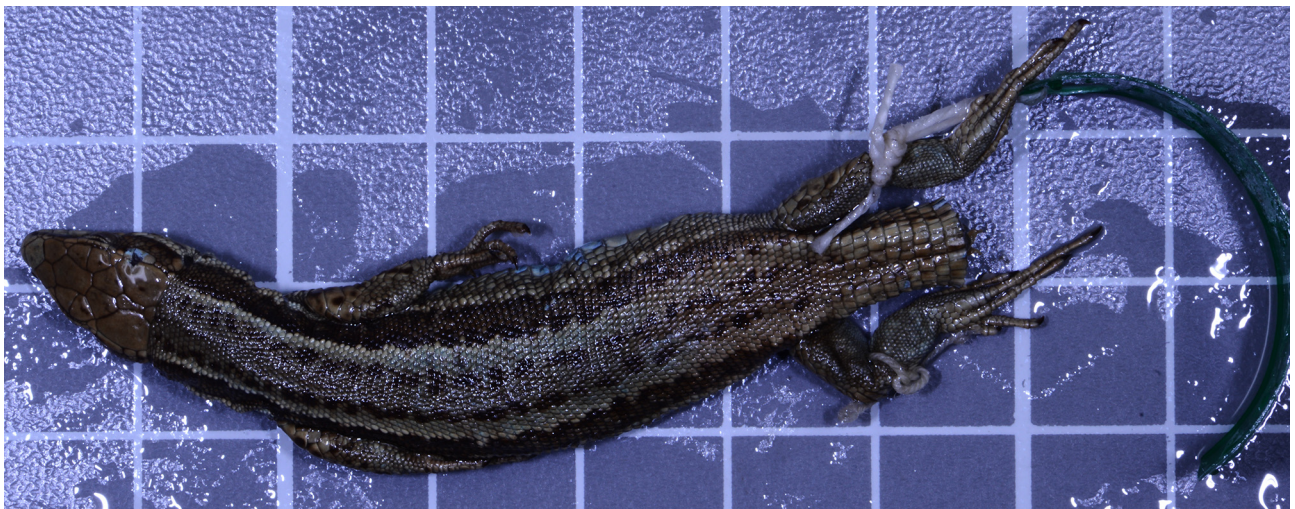
13 These 11 specimens all have a confirmed collector name, locality and date of collection. We can confirm that all are syntypes of *Lacerta boemica* described by Georgy Feodorovich Sukhov who gave part of his own reptile collection to his friend and colleague L.A. Lantz.

14 Not originally indicated as type in the BMNH catalogue.

**Spain: Urodela**—**Salamandridae**: *Euproctus asper* [*Calotriton asper*] (2), north slope of Maladeta, Plan des Étangs [Spanish Pyrenean, Posets-Maladeta Natural Park, Maladeta mountain range]: BMNH 1928.11.22.13–14 (present); (2), lake Yp, near Canfranc, elev. 2119 m [Aragon, Province of Huesca]: BMNH 1931.1.5.69–70 (present); (1), Dané-Spumos, near Sallient, Prov. Jaca, elev. 2200 m [Sallent de Gallego, Jaca en Huesca, Province of Huesca]: BMNH 1951.1.5.72 (present); *Triturus boscai* [*Lissotriton boscai*] (3), Galicia? [Spain], [and?] Penafiel [locality in Portugal], Lugo? [locality in Galicia, Spain], captive bred by Lantz: BMNH 1947.1.4.55–57 (present). **Lacertilia**—**Lacertidae**: *Podarcis bocagii* [*Podarcis bocagei*] (2), La Coruna, Galice: BMNH 1966.459–460 (not present; 1<sup>st</sup> May 1922 male, 1<sup>st</sup> May 1923 female); *Podarcis hispanica hispanica* (2), City of Valencia: BMNH 1965.394–395 (present; 1923; Lantz field tags 1181R and 1115R); *Podarcis hispanica vaucheri* or *Lacerta hispanica* [*Podarcis vaucheri* (Boulenger)] (8), Granada, Spain: BMNH 1965.396–403 (present); (9), Gibraltar, UK: BMNH 1965.404–412 (present); (1), Mines of Rio Tinto, Huelva Province: BMNH 1966.435 (present; male); (2), Sierra de Aracera, Prov. of Huelva, Andalusia: BMNH 1966.440–441 (present; coll. J. Armitage, 10 July 1935); (6), Sierra de Ronda, elev. 1000–1200 m: BMNH 1966.442–447 (present; coll. J. Armitage, 5 June 1935); *Psammodromus algirus* (Linnæus) (1), Sierra Nevada, 1500 m: BMNH 1965.511 (present; 24 September 1935). **Phyllodactylidae**: *Tarentola mauritanica* (1), Granada: BMNH 1947.1.4.91 (present).

**Switzerland: Anura**—**Ranidae**: *Rana dalmatina* (5), Locarno: BMNH 1951.1.5.53–57 (present; “transition to *latas-tei*”). **Urodela**—**Salamandridae**: *Salamandra atra* (Laurenti) (1), Flumsberg, Canton St. Gallen, elev. 1400 m [Flumserberg, near the city of Flums]: BMNH 1947.1.4.31 (present); *Salamandra salamandra salamandra* (Linnæus) (3), Lugano: BMNH 1947.1.4.15–17 (not present). **Lacertilia**—**Lacertidae**: *Lacerta viridis viridis* (Laurenti) (5), Ascona near Locarno: BMNH 1965.461–465 (present).

**Former Yugoslavia: Urodela**—**Salamandridae**: *Triturus alpestris reiseri* (sic) [*Ichthyosaura alpestris reiseri* (Werner)] (2), Vranica Planina, Lake Prokosko [Bosnia and Herzegovina]: BMNH 1928.11.22.6–7 (present); (1), captive bred from parents from Lake Prokosko (Bosnia; see below): BMNH 1928.11.22.8 (present); (1), Lake Prokosko [Bosnia and Herzegovina, Prokosko Lake, municipality of Fojnica]: BMNH 1947.1.4.42 (present).



**FIGURE 7.** L.A. Lantz received many specimens from his Russian colleague G.F. Sukhov like this *Darevskia caucasica* from Georgia that he later deposited in the Natural History Museum collections (BMNH 1966.765).

#### Middle East

**Iran: Lacertilia**—**Lacertidae**: *Lacerta brandtii* [*Iranolacerta brandtii*] (3), salt lake near Ardebil [sometimes called Ardabil]: BMNH 1913.2.4.1–3 (present).

**Israel: Lacertilia**—**Lacertidae**: *Ophisops elegans* (Ménétries) (6), Kefar-Giladi [Kfar-Guiladi] alt. 350 m: BMNH 1966.810–815 (present; coll. Hoofien 19–20 October 1948, see Ineich *et al.* 2017).

**“Palestine” (borders varied greatly through time): Lacertilia**—**Agamidae**: *Agama stellio* [*Stellagama stellio* (Linnæus)] (2), Wadi Muscara [possibly Musrara near Jerusalem?]: BMNH 1947.1.4.93–94 (present).

**Lebanon: Lacertilia**—**Lacertidae**: *Lacerta fraasii* [*Parvilacerta fraasii* (Lehrs)] (2), Bcharre (Libanon) Syria [Bcharré, Libanon]: BMNH 1966.431–432 (present; leg Hans Kulzer, 1937).

#### Asia



**Hong Kong: Lacertilia**—**Lacertidae**: *Tachydromus sexlineatus ocellatus* (Guérin-Méneville) (2), Shatim: BMNH 1965.502–503 (present; 1948; coll. J.D. Romer); (7), New territories: BMNH 1965.504–510 (present; coll. J.D. Romer<sup>15</sup>).

**Japan: Urodela**—**Hynobiidae**: *Hynobius lichenatus* Boulenger (2), Tochio near Nagaoka, Nilgata-ken, Hondo [= Honshu]: BMNH 1931.8.7.8–9 (present) [both specimens are syntypes of *Hynobius longimanus* Lantz considered a junior synonym]; *Pachypalaminus boulengeri* [*Hynobius hirosei* Lantz; previously considered as junior synonym of *Hynobius boulengeri* (Thompson), the species was recently revalidated] (1), Shikoku, Mt Ishizuchi [volcano located in the Ehime Prefecture]: BMNH 1931.8.7.7, 1946.9.6.48 and 1947.1.1.18 (present) [three syntypes of *H. hirosei*]. **Salamandridae**: *Cynops pyrrhogaster* (Boie) (2), Okinawa Shima, Riu Kiu Islands [Okinawa Island, Ryukyus Archipelago]: BMNH 1928.11.22.10–11 (“white spots on back due to disease”; absent; identified as *C. p. ensicauda*); (1) Japan [precise location lacking]: BMNH 1959.1.5.4 (present); (1): Ryukyu Islands, Okinawa Island: BMNH 1931.8.7.6 (present).

#### North America and Caribbean

**Jamaica: Anura**—**Hylidae**: *Hyla brunnea* [*Osteopilus ocellatus* (Linnæus)] (1), no locality: BMNH 1936.10.6.1 (not present; coll. J. Armitage). **Lacertilia**—**Sphaerodactylidae**: *Sphaerodactylus argus* Gosse (4), [precise locality lacking]: BMNH 1947.1.4.58–61 (present; 1 specimen and three eggs).

**USA: Anura**—**Ranidae**: *Rana virgatipes* [*Lithobates virgatipes* (Cope)] (2), North Ame [=North America?], Dismal Swamp, near Lake Drummond, Norfolk [Virginia]: BMNH 1931.8.7.10–11 (present). **Hylidae**: *Hyla femoralis* [*Dryophytes femoralis* (Daudin)] (1), Dismal Swamp, Norfolk Co., Virginia: BMNH 1931.8.7.12 (present). **Urodela**—**Plethodontidae**: *Ensatina eschscholtzii* Gray (1), San Diego, California: BMNH 1931.8.7.5 (present; coll./obtained 1928); *Plethodon cinereus* (Green) (1), Cold Spring Harbor, New York: BMNH 1947.1.4.3 (present; coll./obtained 27 March 1945).

**Unknown localities or captive bred hybrids: Anura**—**Discoglossidae**: hybrid *Discoglossus pictus sardus* (male n° 6 from Oristano, Sardinia) x *D. p. pictus* (“striped”, female n° 12 from Tunis) (4), BMNH 1951.1.5.73–75, 1951.1.5.81 (present); hybrids *D. p. sardus* x *D. p. pictus* (eggs laid 10 May 1936) (4), no locality: BMNH 1951.1.5.76–79 (present); (8) hybrids *D. p. pictus* male from Bulle Regia and female from Tunis: BMNH 1951.1.6.5–12 (present). **Ranidae**: *Rana temporaria* (10): BMNH 1927.11.23.7–16 (present; 4 juveniles, approx. 11 tadpoles and several eggs). **Urodela**—**Ambystomatidae**: *Ambystoma opacum* (Gravenhorst) (10), captive bred: BMNH 1927.11.23.19–28 (present; 4 juveniles, approx. 15 larval stages and 11 eggs). **Salamandridae**: *Cynops pyrrhogaster* (3), BMNH 1956.1.7.90–92 (present); *Euproctus asper* [*Calotriton asper*] (1), captive bred: BMNH 1928.11.22.12 (present; bred 1923 died 1924), BMNH 1928.11.22.17 (present); hybrid *Triturus alpestris* [*Ichthyosaura alpestris*] x *Triturus boscai* [*Lissotriton boscai*] (1), *T. alpestris*? [*Ichthyosaura alpestris*] from Sollingen Wald, Braunschweig, Germany and *T. boscai*? [*Lissotriton boscai*?] from Penafiel, Portugal: BMNH 1928.11.22.23 (present); hybrids *Triturus cristatus* x *Triturus marmoratus* (2), preserved after metamorphosis: BMNH 1928.11.22.25–26 (present; no locality). **Lacertilia**—**Chamaeleonidae**: *Chamaeleo chamaeleon* (Linnæus) (17 young + 1 egg): BMNH 1947.1.5.8 (present; bred by Lantz). **Lacertidae**: *Lacerta agilis agilis* (7), captive bred: BMNH 1965.423–429 (present); hybrids *Lacerta lepida lepida* [*Timon lepidus*] female x *Lacerta lepida pater* [*Timon pater*] male (5), BMNH 1966.467–471 (not present; kept 9 years in captivity between 14 September 1925 and August 1936).

## 2. Lantz’s NHM collection from the French Mediterranean Provence islands

The collection made by L.A. Lantz on the French Mediterranean border and surrounding islands (Fig. 8) is particularly interesting in several regards. Lantz is the first herpetologist to have visited the archipelago of the islands of Hyères from which he collected specimens which today remain the only museum material from this part of the world and several other islands and islets of the Provençal coast. In his surveys he visited 13 islands and islets, which are sometimes difficult to access, most of which have only been revisited within the last 30 years. The register of collections deposited at the BNMH lists 219 specimens belonging to 10 species (Table 1). Research conducted in the museums of southern

15 These specimens from Hong Kong were most likely exchanged or given to L.A. Lantz by J.D. Romer who resided in Hong Kong.

France (Nice, Toulon, Marseille, Aix-en-Provence, Avignon, and Nîmes), in the MNHN Paris and at ZISP of St.-Petersburg show that there are no specimens from those islands, the only exception being some specimens at the MNHN collected by Louis-Philippe Knoepffler during the years 1950–1960 (Table 1). Note however that the Zoologisches Forschungsmuseum Alexander Koenig (ZFMK) in Bonn, Germany, possess several vouchers of *Podarcis muralis* from Port-Cros Island. As a result, some of the specimens from Lantz's collection today have increased scientific value, most notably in the case of the two *Timon lepidus* specimens collected from the island of Porquerolles (BMNH 1965.467–468) which are the only representatives of a population that is today considered extinct (Cheylan 2016).



**FIGURE 8.** Location of the French Mediterranean islands and islets visited by Lantz during his herpetological prospecting.

Further examination of these collections resulted in us finding specimens of some species (*Discoglossus sardus*, *Podarcis muralis*) that were thought of as previously missing, such as in the case of the Tyrrhenian Painted Frogs (*D. sardus*), Lantz (1931) mentioned that he collected 32 of them. It is also clear that collection tags from the NHM given to Lantz's specimens (the bulk of which begin with either the year 1947 or 1951) did not often correspond with their collection date (April 1931), curiously with the exception of two snakes, *Malpolon monspessulanus* and *Natrix maura*, for which the registration number on the collection tag does actually begin with 1931, reflecting more accurately the date of collection (Table 1). These collections then would have been donated to the NHM much later than the dates they were collected, that is after Lantz had moved to the UK and settled there. It is not uncommon for herpetologists with an interest in keeping animals alive to make observations on them and to wait until they die or even much later before donating them to collections. This is confirmed by the fact that the original register shows Lantz as donor and gives his UK home address in full.

As can be seen in Table 1, all the specimens collected by Lantz were deposited in the NHM collection (even *Discoglossus* sp. which were kept for 15 years in captivity). There were only a few species which were observed by Lantz and not collected, records of which were published even if not collected. There are, however, two species in the collection that were not reported in Lantz's publications although he collected them himself [*Euleptes europaea* from Bagaud and Rascas and *Hemidactylus turcicus* from Port-Cros and Levant Island (the latter species not reported in Lantz's note on amphibians and reptiles of the Hyères Islands!)].

L.A. Lantz was the first to report *Hyla meridionalis* on the island of Porquerolles and to note its absence on the island of Port-Cros, where it seems to have been introduced later by Marcel Henry during the ten years between 1930 and 1940 in order to help in the fight against mosquitoes (Knoepffler 1973). After a period of prosperity on this island (Cheylan 1983), the hylid frog disappeared in the early 2000s for an unknown reason. Lantz collected *Hemidactylus turcicus* on Port-Cros and on the island of the Levant, which represents the first mention of the species on both islands. His collections also report for the first time the following species: *Euleptes europaea* on Bagaud (Fig. 9), Port-Cros, Rascas, Tiboulén de Ratonneau; *Podarcis muralis* on the islets of Grand and Petit Congloués, Grand Gaou, Lion de Mer, île Rousse and the island of Bendor; *Malpolon monspessulanus* on Porquerolles; *Zamenis scalaris* and *Natrix maura* on the island of the Levant.



It was not until the 1960s and 1970s that these islands were again explored from a herpetological point of view (Knoepffler 1960, 1973; Cheylan 1983). His Mediterranean explorations also brought Lantz to the island of Bendor (Commune of Bandol, Department of Var) and to the Tiboulen Islet and Pomègues Islet of Ratonneau (Archipelago of Frioul in the bay of Marseille) where he collected *Euleptes europaea* (Fig. 10). The species was rediscovered on this island many years later in 2003 by Jean-Yves Dardun (unpublished).

The Marseille herpetologist Marcel Mourgue (1876–1945), to whom we owe several works on the herpetofauna of Provence, planned to study the varieties of *Podarcis muralis* on the islands of the Gulf of Marseille with L.A. Lantz as he stated in his April 1924 paper (Mourgue 1924): “<sup>16</sup>Our colleague M. Lantz, a specialist for Lacertilians will give with my collaboration, a detailed study of these forms that had never been studied by any natural scientist in Marseille”. This project unfortunately never materialized.



**FIGURE 9.** Bagaud island observed from Port-Cros, 15 May 2005. During his visit on the island, L.A. Lantz was most certainly housed in the mill fort by Marcel Henry who was the then owner of the island. The mill fort is visible in the upper central section of the photo.

## Conclusion

Louis Amédée Lantz was a very active herpetologist, despite the fact that he was not a professional. His contribution to Palearctic herpetology was considerable taking into account both his collected specimens and his published papers. Our research allowed identification of several type specimens: paralectotypes of *Lacerta saxicola obscura* Lantz & Cyrén (BMNH 1918.11.21.5–7), syntypes of *Lacerta boemica* Sukhov (BMNH 1960.1.4.26–30, BMNH 1965.337–342), and syntypes of *Lacerta viridis media* Lantz & Cyrén (BMNH 1960.1.4.25, 1966.512). Particularly useful, his pioneering observations on French Mediterranean island reptiles represent a valuable initial historical time frame for future generations and the NHM (UK) Lantz collections are a precious resource for studying this particular evolutionary history. Although these islands are now easily accessible for naturalists, thanks in particular to their status as national parks (the Port-Cros National Park was created in 1963 and the Calanques National Park in 2012), Lantz’s contribution remains very important even now, more than 80 years later. Specimens collected on these islands by Lantz are, still today, among the only ones available in collections. They are particularly valuable for identifying recent introductions of alien herptiles on the Hyères Islands like the ranid frog *Pelophylax ridibundus* and the Moorish Gecko *Tarentola mauritanica* (see Deso *et al.* 2018).

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16 Translated from French.

**TABLE 1.** Amphibians and reptiles collected by L.A. Lantz on French Mediterranean islands, most of them deposited in NHM (UK) collection. We indicate date of collection and later confirmation of occurrence by subsequent authors and/or observations by Lantz (1931).

Species	Island	Number and location of specimens	Date of collection or observation	Date of registration	Remarks
<b>HYERES ARCHIPELAGO</b>					
<b>Anura</b>					
<i>Discoglossus sardus</i>	Port-Cros Island	16 specimens originally at BMNH (some have been exchanged)	1931	1931 & 1951	28 specimens collected in April 1931 (Lantz 1931), and kept in captivity 15 years (Lantz in Bruce & Parkes 1947)
Id.	Levant Island	4 specimens at BMNH	1931	1951	Specimens kept in captivity 15 years (Lantz in Bruce & Parkes 1947)
<i>Hyla meridionalis</i>	Porquerolles Island	1 specimen at BMNH most likely from that island	1931	1947	Lantz (1931); confirmed by Cheylan (1983)
Id.	Port-Cros Island		Absent in Lantz (1931)		Considered as not occurring there by Lantz (1931), most likely introduced later by Marcel Henry in the 1930–1940 (according to Knoepffler (1973)). Occurrence confirmed by Cheylan (1983) and nowadays extinct on that island
<b>Lacertilia</b>					
<i>Hemidactylus turcicus</i>	Port-Cros Island	3 specimen at BMNH	1931	1947	Not mentioned by Lantz (1931). 6 specimens at MNHN collected by Knoepffler in 1968
Id.	Levant Island	1 specimen at BMNH	1931	1947	Not mentioned by Lantz (1931). Occurrence confirmed in 2005 by A. Joyeux (pers. comm. to M. Cheylan)
<i>Euleptes europaea</i>	Bagaud Island	1 specimen at BMNH	1931	1947	Not mentioned by Lantz (1931). 9 specimens at MNHN collected in 1958 and 1968 by Knoepffler
Id.	Port-Cros Island	9 specimens at BMNH	1931	1931 & 1947	Lantz (1931). 16 specimens at MNHN collected by Knoepffler in 1967 and 1968. 1 additional specimen collected by M. Delaugerre in 1978
Id.	Levant Island	3 specimens at BMNH	1931	1947	Lantz (1931). 2 specimens at MNHN collected earlier by Desguez in 1890 reported by Léger in Jahandiez (1929), and 2 specimens at MNHN collected later by Knoepffler in 1960
Id.	Rascas Island	1 specimen at BMNH	1933	1947	Not mentioned by Lantz (1931). Confirmed by Knoepffler (1973) and later by Cheylan (1983)
<i>Podarcis muralis</i>	Port-Cros Island	37 specimens at BMNH	1931	1966	Lantz (1931)
Id.	Levant Island	7 specimens at BMNH	1931	1966	Lantz (1931)

.....continued on the next page



TABLE 1. (Continued)

Species	Island	Number and location of specimens	Date of collection or observation	Date of registration	Remarks
Id.	Porquerolles Island	11 specimens at BMNH	1931	1966	Lantz (1931)
Id.	Bagaud Island	4 specimens at BMNH	1935	1966	
Id.	Rascas Island	1 specimen at BMNH	1933	1966	
<i>Timon lepidus</i>	Porquerolles Island	2 specimens at BMNH	1931	1965	Lantz (1931): observed but ?not collected
<b>Serpentes</b>					
<i>Malpolon monspesulamus</i>	Porquerolles Island	1 specimen at BMNH	1931	1931	Lantz (1931). Confirmed by Salgues (1937) and later by Knoepfler (1960, 1973)
<i>Zamenis scalaris</i>	Levant Island	1 specimen at BMNH	1931	1933	Lantz (1931). Confirmed by Besson in 1970 ( <i>in</i> Cheylan (1983))
<i>Natrix maura</i>	Levant Island	1 specimen at BMNH	1931	1931	Lantz (1931). Confirmed by Knoepfler in 1960 and later by Besson in 1970 ( <i>in</i> Cheylan 1983)
<b>ISLANDS OF MARSEILLE</b>					
<b>Lacertilia</b>					
<i>Euleptes europaea</i>	Tiboulon de Ratonneau Island	3 specimens at BMNH	?	1947	Unknown collect date. Occurrence later confirmed in 2003 by J.-Y. Dardun (Database Pim)
<i>Podarcis muralis</i>	Ratonneau Island	5 specimens at BMNH	1933	1966	Reported by Mourgue (1924)
Id.	Pomègues & Ratonneau Islands	5 specimens at BMNH	1923	1966	Leg. M. Mourgue to Lantz; reported by Mourgue (1924)
Id.	Grand et Petit Congloués	4 specimens at BMNH	1923	1966	Leg. M. Mourgue to Lantz; occurrence confirmed by Cheylan in 1985
<i>Podarcis siculus campestris</i>	Château-d'If Island	29 specimens at BMNH	1932 & 1934	1966	Reported by Mourgue (1924) as <i>Lacerta serpa campestris</i> (checked by Lantz)
<b>OTHER ISLANDS</b>					
<b>Lacertilia</b>					
<i>Euleptes europaea</i>	Bendor Island	4 specimens at BMNH	1933	1947	Jahandiez <i>et al.</i> (1933). Previously reported by Mourgue (1910)
<i>Podarcis muralis</i>	Bendor Island	20 specimens at BMNH	1931	1966	Jahandiez <i>et al.</i> (1933)
Id.	Grand Gaou Island	6 specimens at BMNH	1933	1966	Confirmed by Angel (1946)
Id.	Le Lion de Mer	36 specimens at BMNH	1933 & 1934	1966	
Id.	Île Rousse	3 specimens at BMNH	1933	1966	



**FIGURE 10.** *Euleptes europaea*, Grand Rouveau Island, Embiez Archipelago, Department of Var, 3 May 2012.

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