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# Aradidae from the Panguana Research Station in Peru with description of *Aneurillus dillerorum* sp.n. (Hemiptera: Heteroptera)

**Ernst HEISS & Franz SCHMOLKE**

## **Abstract**

A collection of flat bugs (Heteroptera, Aradidae) from the Panguana Research Station in the Amazonian lowland rainforest of Peru contained 21 species belonging to 12 genera of the subfamilies Aneurinae (1) and Mezirinae (11). Six species (*Dysodius equatorianus* KORMILEV, 1975; *Lobocara oblonga* BERGROTH, 1892; *Mezira boliviiana* KORMILEV, 1962; *Mezira handlirschi* (BERGROTH, 1898); *Phyllotingis eximia* (HAGLUND, 1868); *Santaremia robusta* KORMILEV, 1960) are new to the Peruvian fauna and a new taxon *Aneurillus dillerorum* sp.n. is described and illustrated.

## **Introduction**

The fauna of Aradidae (flat bugs) of the Neotropical Region is still insufficiently explored, although the most recent “Catalog of Aradidae for the Neotropical Region” (COSCARÓN & CONTRERAS, 2012) lists 80 genera and 509 species described to date. The generally increasing land use and destruction of indigenous forests and other unique habitats, particularly in the Amazonian lowland rainforests, reduce considerably the native flora and fauna, primarily insects, sometimes even before the species are discovered and scientifically described.

The Biological Research Station Panguana (Área de Conservación Privada, ACP) in Peru, Departamento de Huánuco, Provincia de Puerto Inca, Distrito de Yuyapichis, is situated between the Cordillera Oriental of the Peruvian Andes and the Sira mountain range at the banks of the Rio Llullapichis, a tributary of Rio Pachitea at an altitude of 260m, 9°37'S, 74°56'W. An area of about 2 km<sup>2</sup> is in the focus of research and is covered by primary rainforest, which belongs to the Amazonian lowland rainforest ecosystem recognized for its high biodiversity.

The scientific research station offers working opportunities in the station area and the surrounding private protected lowland rainforest. It is protected as Biological Research Station and nature reserve by the Government of Peru and directed by Dr. Juliane Diller. The biological objects are continuously studied by taxonomic specialists and more than 180 publications have been published so far. For further information refer to (Diller, 2016).

Although the fauna of Heteroptera in general and of Aradidae in particular was not yet part of a research project, the few by-catches of flat bugs represent a first faunistic account of the existing fauna in the Panguana area, which is expected to be more diverse. Six species are reported here as new for the Peruvian fauna and a new taxon *Aneurillus dillerorum* n.sp. is described from this material.

## **Material and methods**

The study is based on material which has been collected during several visits at the Biological Research Station Panguana, Peru, by staff members of the ZSM and students. They are now preserved in the following institutions.

Acronyms for collections mentioned in the text:

- NHNL Museo de Historia Natural Javier Prado of the University San Marcos in Lima (Universidad Nacional Mayor de San Marcos)
- ZSM Zoologische Staatssammlung München, Munich, Germany.  
If not specified, the cited specimens are in the collection of ZSM.
- CEHI Collection Ernst Heiss, Tiroler Landesmuseum, Innsbruck, Austria.

Measurements were taken with a micrometre eyepiece 40 units = 1mm or are given in millimetres. A slash (/) separates lines on cited labels, and a double slash (//) separates labels; pr = printed. Number of recorded males/females is indicated, e.g. as 2/1.

Abbreviations used: deltg = dorsal external laterotergite (connexivum), ptg = paratergite.

## Taxonomy

Of the 5 subfamilies reported to date from Peru: Aneurinae, Aradinae, Calsisinae, Carventinae and Mezirinae (COSCARÓN & CONTRERAS, 2012), all but one species recorded from Panguana ACP belong to the most diverse and abundant subfamily Mezirinae. Only one taxon of the subfamily Aneurinae was found in Panguana Station, which is described and figured below as *Aneurillus dillerorum* sp.n.

### Subfamily Aneurinae DOUGLAS & SCOTT, 1865

#### *Aneurillus dillerorum* HEISS sp.n. (Figs. 1-5)

**Holotype:** male, glued on card and labeled „Peru Dept. Huánuco / Panguana ACP Rio Yuyapichis / 9°37'S, 74°56'W, 230m / 24.Sept.- 11.Okt. 2011 / leg. Lan Yu Liu (pr) //; Holotype / *Aneurillus* / *dillerorum* sp.n. / des. E.Heiss 2016 (pr) // (NHNL). The holotype lacks right mesotibia and tarsus.

**Paratype:** female, same data, is designated and labeled accordingly (ZSM).

**Diagnosis.** *Aneurillus dillerorum* sp.n. is distinguished from the only known neotropical *Aneurillus* species *A. doesburgi* (KORMILEV, 1974) from Surinam by following characters: smaller size (2.8mm *dillerorum* - 3.92mm *doesburgi*), rounded postocular lobes (angular), different ratio of antennal segments I/II/III/IV = 4/5/9/14 (4/5/6/12.5) and transverse oval pygophore (elongate, posteriorly produced).

**Description.** Small slender species; surface of body glabrous and smooth, head and scutellum finely striate; antennae beset with thin setae; colouration reddish brown.

Head. Slightly longer than width across eyes (17/16); apex of clypeus rounded, shorter than antennal segment I; genae shorter than clypeus; antenniferous lobes short and obtuse; antennae twice as long as width of head (32/16), length of antennal segments I/II/III/IV = 4/5/9/14; postocular lobes roundly converging posteriorly to constricted collar; vertex flat, transversely striate, with two oval smooth depressions laterally. Rostrum shorter than head, rostral groove open posteriorly.

Pronotum. About twice as wide as long (30/14); lateral margins subparallel at humeri then sinuately converging anteriorly; supracoxal lobes and epimeral flaps visible from above; anterior margin concave, posterior margin straight; disk with a median longitudinal and a transverse sulcus on posterior lobe.

Scutellum. Semicircular, longer than wide (20/11) with basal and sublateral sulci, surface striate.

Abdomen. Elongate oval, lateral margins evenly rounded; deltg II+III fused, tergite VII with a separate triangular sclerite; surface of venter smooth and glabrous, the sublateral fold delimiting the ventral hem developed on sternites II-VII; spiracles II, VI and VII lateral and visible from above, III-V ventral, VIII terminal on ptg VIII.

Hemelytra. Corium short, reaching about half of scutellum; membrane fully developed, covering anterior half of tergite VII, surface wrinkled.

Legs. Femora short and incrassate; tibiae tapering toward base, tarsi two-segmented, claws with pulvilli and setiform parempodia.

Male genitalia. Pygophore transversely oval, surface smooth at middle, rugose laterally, ptg VIII truncate. The single specimen was not dissected for the study of parameres.

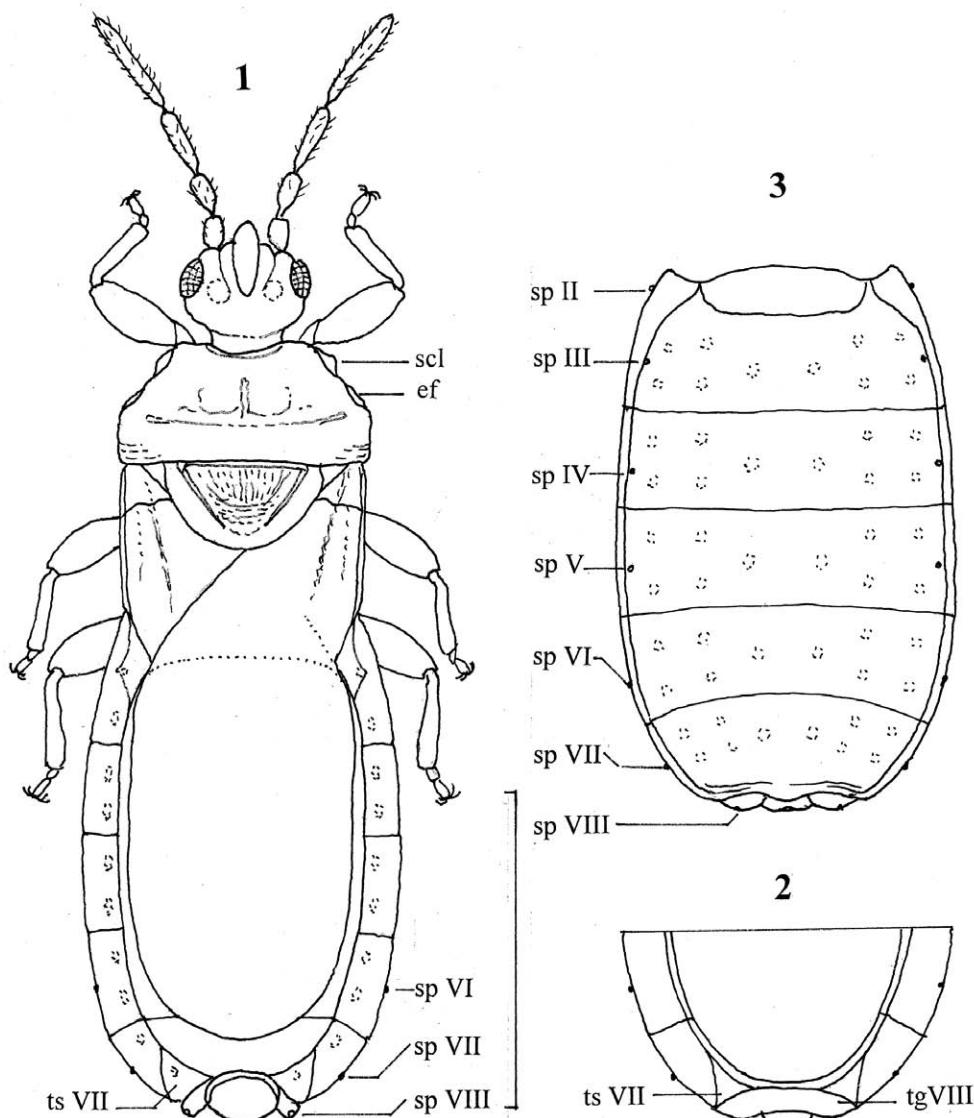
Female. Basically as male but of slightly larger size; tergite VIII wide and narrow; apex of posteriorly exposed tergite IX truncate.

Measurements. Holotype: Length 2.80mm; length of antennae 0.8mm; width of abdomen across tergite IV 1.0mm. Paratype. Length 2.97mm; width / length of head 17.5/17; Pronotum w/l 32/15; scutellum w/l 22/12; length of antennae 0.86mm; length of segments I/II/III/IV = 5/6/9/14.5; ratio length / width of head 1.97; width of abdomen 1.3mm.

**Etymology.** It is a great pleasure to dedicate this second neotropical *Aneurillus* species to Julianne and Erich Diller, appreciating and honouring their engagement at the Biological Research Station Panguana since many years and their continuous support and scientific guidance to visiting research students of the unique fauna of Panguana.

**Discussion.** The genus *Aneurillus* was erected by KORMILEV (1971) as subgenus of *Aneurus* CURTIS, 1825. KORMILEV & FROESCHNER (1987) recognized it as genus and listed 13 species (9 spp. Oriental region, 1 sp. Palaearctic, 2 spp. Ethiopian, 1 sp. Neotropical) of which 3 oriental and the palaearctic species were transferred to *Aneurillodes* by HEISS (1999). Only one additional species has been described since the description of *A. zairenus* HEISS, 1989 from Africa.

The only to date recorded *Aneurillus* species from the Neotropical region is *A. doesburgi* (KORMILEV, 1974) which was described based on a single female from Surinam. The new species from Peru is the second species record of this genus from South America.



**Figs. 1-3.** *Aneurillus dillerorum* sp.n. 1 – holotype male, habitus dorsal; 2 – paratype female, terminal segments dorsal; 3 – ditto abdomen ventral. Abbreviations: ef – epimeral flap; scl – supracoxal lobe; sp II-VIII – spiracles II-VIII; tg – tergite VIII; ts – triangular sclerite of tergite VII. Scale 1mm.

## Subfamily Mezirinae OSHANIN, 1908

### *Aphleboderrhis comata* CHAMPION, 1898

1/0: 8 IV 2003, leg. Zwakhals

**Distr.:** Argentina, Brazil, Panama, Peru, French Guyana

### *Artagerus crispatus* STÅL, 1860

1/0: 20 IX – 7 X 2013, leg. Burmeister

**Distr.:** Brazil, Peru, Panama

### *Cinyphus* sp.

1/0: 21 IX – 4 X 2004, leg., Schönitzer, Kothe & Breitsameter

**Note:** This Neotropical genus comprises to date 15 species, of which 4 are recorded from Peru. A taxonomic revision based on type material is necessary for an unambiguous identification.

### *Dysodus equatorianus* KORMILEV, 1975

0/1: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter

**Distr.:** Ecuador, French Guyana, Surinam. **New for Peru.**

### *Dysodus lunatus* (FABRICIUS, 1795)

3/2 28 IX – 6 X 2003, leg. Burmeister, Diller, Kothe, Schlang; 1/0: 8 IV 2003, Zwakhals; 2/1: 6 – 17 IV 2003, leg. Burmeister; 0/1: 6 – 17 IV 2003, leg. Kothe; 1/0: 8 VI 2003, leg. E.Diller; 0/1: 21 XI – 4 XII 2004, leg. Schönitzer, Kothe, Breitsameter; 1/0: 19 IX – 2 X 2005, leg. Burmeister, Diller, Gruler, Breitsameter, Kothe; 2/3: 11 XII 2008, leg. Schönitzer, Glaw, Wachtel; 1/0: 24 IX – 11 X 2011, leg. Lan Yu Liu; 1/0: IV 2012, leg. Diller 0/1: 29 IX – 11 X 2014, Schönitzer

**Distr.:** Argentina, Brazil, Paraguay, Bolivia, Peru, Ecuador, Colombia, Venezuela, Surinam, British Guyana, French Guyana, Trinidad & Tobago, Honduras, Belize, Panama, Nicaragua, Costa Rica, Guatemala, Mexico.

### *Dysodus magnus* HEISS, 1990

0/2: 28 IX – 6 X 2003, leg. Burmeister, Diller, Kothe, Schlang; 2/0: 6 – 17 IV 2003, leg. Burmeister; 1/0: 21 IX – 4 X 2004, leg. Kothe; 4/2: 21 IX – 4 X 2004, leg. Schönitzer, Kothe, Breitsameter; 1/0: 18 IX – 3 X 2005, leg. Burmeister; 3/3: 19 IX – 2 X 2005, leg. Burmeister, Diller, Gruler, Breitsameter, Kothe; 1/1: 23 XI – 11 XII 2008, leg. Schönitzer, Glaw, Wachtel; 0/1: 22 XI – 7 XII 2008, leg. Diller; 2/4: 2 – 18 X 2009, leg. Burmeister; 1/0: 2 X – 19 X 2009, leg. Diller; 1/1: 1 X 2010, leg. Diller; 0/1: 21 IX – 8 X 2012, leg. Schönitzer; 1/0 26 IX – 12 X 2014, Diller; 0/1: 29 IX – 11 X 2014, leg. Schönitzer

**Distr.:** Brazil, Bolivia, Peru, Ecuador, Surinam, French Guyana.

### *Helenus wachteli* HEISS, 2016

Holotype male: 1–24 XI 2010, F.Wachtel (NHNL); Paratypes: 0/1: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter (NHNL); 1/0: 6 IV – 17 IV 2003, leg. Diller (ZSM).

**Distr.:** Only two further records from Peru (Iquitos) and one from Bolivia (Cochabamba). The record of *Helenus hesiformis* WHITE, 1879 from Peru (Amazonas Superior) by KORMILEV (1962), most probably refers to *H. wachteli*.

### *Hesus acuminatus* (FABRICIUS, 1803)

0/1: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter; 0/1: 21 IX – 4 X 2004, leg. Kothe; 0/1: 18 IX – 2 X 2005, leg. E.Diller & O.Gruler; 0/1: 20 IX – 9 X 2007, leg. Burmeister; 0/1: 2 – 18 X 2009, leg. Burmeister; 1/0: 24 IX – 11 X 2011, leg. Lan Yu Liu; 0/2: 29 IX – 11 X 2014, leg. Schönitzer

**Distr.:** Brazil, Bolivia, Peru, Ecuador, Colombia, French Guyana.

### *Hesus cordatus* (FABRICIUS, 1803)

1/0: 6 – 17 IV 2003, leg. Kothe; 0/1: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter; 1/0: V 2013, Malaisefalle, leg. Diller; 0/1: 10 – 28 V 2013, leg. Burmeister; 0/1: 20 IX – 6 X 2013, leg. Diller; 0/1: 26 IX – 12 X 2014, leg. Diller

**Distr.:** Brazil, Bolivia, Peru, French Guyana, Surinam, Panama, Nicaragua, Mexico.

### *Hesus flaviventris* (BURMEISTER, 1835)

1/1: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter; 0/1: 20 IX – 9 X 2007, leg. Burmeister; 2/1: 2 – 18 X 2009, leg. Burmeister

**Distr.:** Brazil, North Argentina, Bolivia, Peru, Ecuador, Colombia, Venezuela, French Guyana, Panama, Nicaragua.

**Hesus subarmatus STÅL, 1873**

1/1: 6 IV – 17 IV 2003, leg. T.Kothe; 2/0: 9 IV 2003, leg. Kothe; 1/0: 13 IV 2003, leg. Kothe; 1/0: 8 IV 2003, leg. Zwakhals; 1/0: 15 IV 2003, leg. Zwakhals; 1/0: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter; 0/1: 23 XI – 11 XII 2008, leg. Diller, Schönitzer, Glaw & Wachtel; 0/1: 10 – 28 V 2013, leg. Burmeister; 1/0: X 2015, leg. Diller

**Distr.:** Brazil, Bolivia, Peru, Colombia, Ecuador, French Guyana, Surinam, Belize, Guatemala, Mexico.

**Lobocara oblonga BERGROTH, 1892**

3/7: 28 – 29 V 2013, leg. Burmeister

**Distr.:** Brazil, Argentina, Bolivia, French Guyana. **New for Peru.**

**Mezira cf. regularis (CHAMPION, 1898)**

0/1: 21 IX – 4 X 2004, leg. Schönitzer, Kothe & Breitsameter

**Distr.:** Argentina, Brazil, Costa Rica, Guatemala, Mexico.

**Note:** The taxonomy of *M. regularis* and the similar *M. barbieri* KORMILEV, 1964 (Brazil, Peru (Huanuco!), Venezuela, French Guyana), *M. romani* KORMILEV, 1962 (Brazil) and *M. variegata* KORMILEV, 1968 (Mexico) is unclear. The characters given in the key by KORMILEV (1971) are variable and cannot be assigned with certainty to a specific taxon.

**Mezira boliviiana KORMILEV, 1962**

1/0: 23 XI–11 XII 2008, leg. Diller, Schönitzer, Glaw & Wachtel

**Note:** *Mezira boliviiana* was described based upon a female from Bolivia (Chaparé). However fig. 14, head and pronotum in the original description is misleading, as the clypeus reaches the apex of antennal segment I, but is indicated as reaching 3/5 of its length. As the length of the clypeus is an important character for separating species, the Panguana specimen was compared with a male from Bolivia (det. Kormilev), to which it conforms.

*Mezira boliviiana* is very similar to *M. proseni* KORMILEV, 1953 described from Argentina but also known from Peru (Tingo Maria) cited by KORMILEV (1975). However, the latter can be usually separated by its distinct smaller size: 6.1mm (holotype male), compared to 8.35mm (holotype male) of *M. boliviiana*.

**Distr.:** Bolivia, French Guyana. **New for Peru.**

**Mezira handlirschi (BERGROTH, 1898)**

0/1: 26 IX – 11 X 2014, leg. Diller

**Distr.:** Brazil, French Guyana, Suriname, Panama. **New for Peru.**

**Mezira neonigripennis KORMILEV, 1953**

4/9: 6 - 17 IV 2003, leg. Burmeister; 1/0: 20 IX – 9 X 2007, leg. Burmeister (ZSM, CEHI); 5/5: 7 – 8 X 2013, leg. Burmeister

**Distr.:** Argentina, Peru (Tingo Maria), Venezuela.

**Phyllottingis eximia (HAGLUND, 1868)**

1/0: V 2013, leg. Diller

**Distr.:** Brazil, French Guyana, Panama. **New for Peru.**

**Phyllottingis lanceolata (FABRICIUS, 1803)**

0/1: V 2013, Malaisefalle, leg. Diller

**Dist.:** Brazil, Peru-Amazonia, French Guyana, Surinam.

**Neuroctenus sp.**

0/1: 20 IX – 7 X 2013, leg. Burmeister

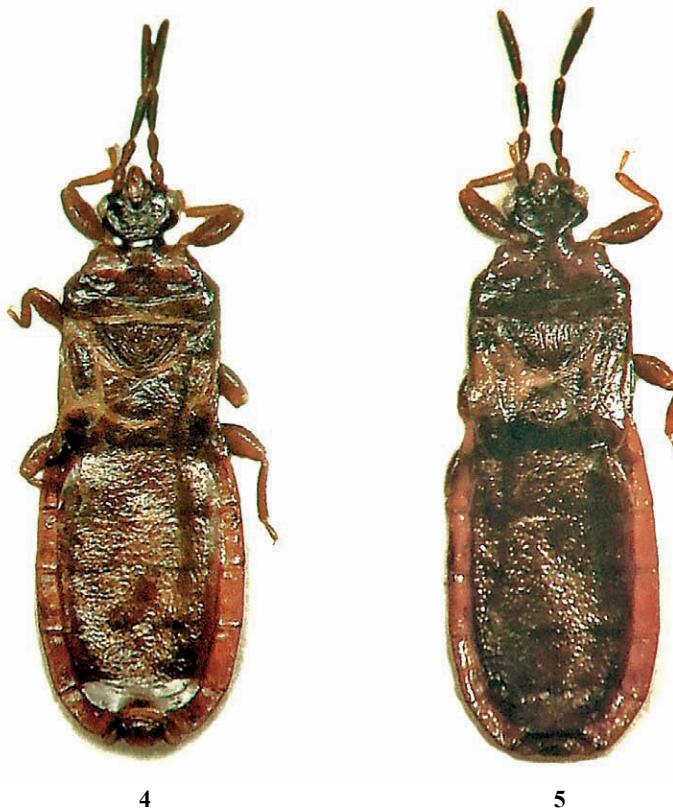
**Note:** There are 37 species of *Neuroctenus* described to date from the Neotropical Region, of which 10 species are recorded from Peru. The genus needs a taxonomic revision and an updated key to be able to unambiguously identify its members.

**Santaremia robusta KORMILEV, 1960**

(*armata* KORMILEV, 1974, syn. HEISS, 2009)

0/1: 20 IX – 7 X 2013, F.Wachtel

**Distr.:** Brazil, French Guyana. **New for Peru.**



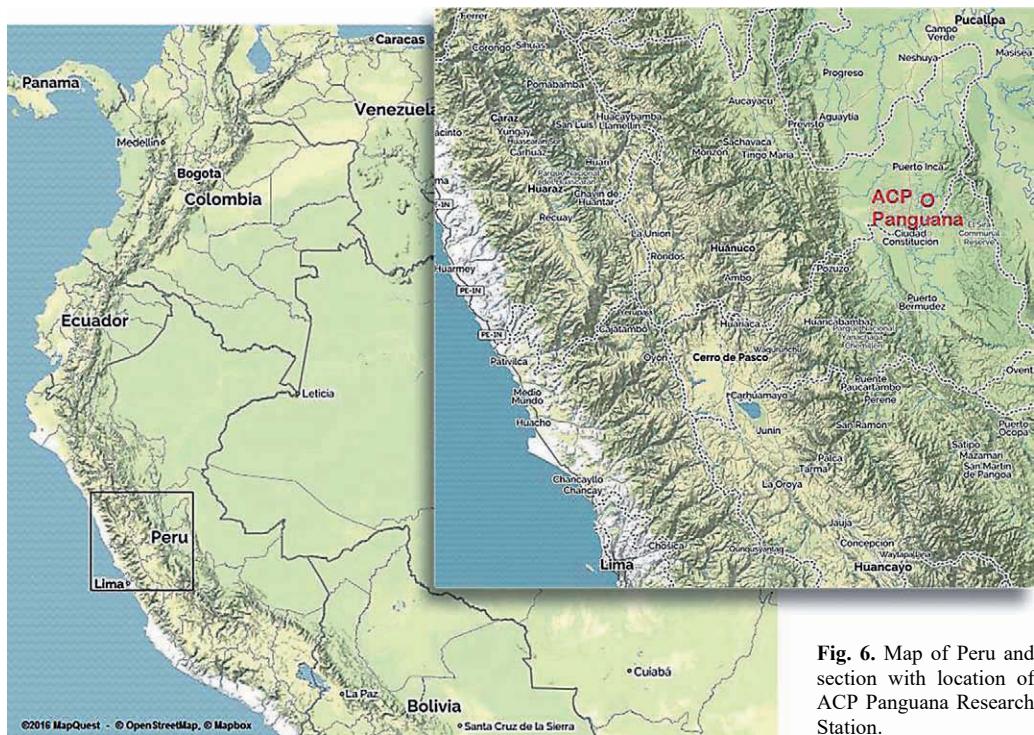
Figs. 4-5. *Aneurillus dillerorum* sp.n. 4 – holotype male; 5 – paratype female.

#### Acknowledgments

We are very grateful to the staff members of the ZSM, Juliane and Erich Diller, who run the Biological Station at Panguana. Our thanks go for Klaus Schönitzer and Ernst-Gerhard Burmeister who collected most Aradidae specimens in Panguana and made them available for this study and Franz Wachtel for providing additional specimens and useful information. We also thank the anonymous reviewers for their constructive comments on an earlier version of the manuscript.

For all activities, collecting (1) and export (2) permits were issued by the State Authorities of Peru: INRENA (Instituto Nacional de Recursos Naturales), DGFFS (Dirección General Forestal y de Fauna Silvestre) and SERFOR (Servicio Nacional Forestal y de Fauna Silvestre) as follows for the years:

- |   |                             |
|---|-----------------------------|
| 2003: (1) N° 0/6-2003-INRENA-IFFS-DCB;  | (2) N° 0002376-AG-INRENA    |
| 2004: (1) N° 063-2004-INRENA-IFFS-DCB;  | (2) N° 004329-AG-INRENA     |
| 2005: (1) N° 073-2005-INRENA-IFFS-DCB;  | (2) N° 006298-AG-INRENA     |
| 2007: (1) N° 097-2007-INRENA-IFFS-DCB;  | (2) N° 010670-AG-INRENA     |
| 2008: (1) N° 124-2008-INRENA-IFFS-DCB;  | (2) N° 011855-AG-INRENA     |
| 2009: (1) N° 334-2009-AG-DGFFS-DGEFFS;  | (2) N° 001075-AG-DGFFS      |
| 2010: (1) N° 0427-2010-AG-DGFFS-DGEFFS; | (2) N° 003889-AG-DGFFS      |
| 2011: (1) N° 0462-2011-AG-DGFFS-DGEFFS; | (2) N° 006672-AG-DGFFS      |
| 2012: (1) N° 0318-2012-AG-DGFFS-DGEFFS; | (2) N° 009708-AG-DGFFS      |
| 2013: (1) N° 0276-2013-AG-DGFFS-DGEFFS; | (2) N° 000521-MINAGRI-DGFFS |
| 2014: (1) N° 007-2014-SERFOR-DGGSPFFS;  | (2) N° 0000326-SERFOR       |
| 2015: (1) N° 007-2014-SERFOR-DGGSPFFS;  | (2) N° 0001757-SERFOR       |



**Fig. 6.** Map of Peru and section with location of ACP Panguana Research Station.

Created with maps of [www.mapquest.com](http://www.mapquest.com)

### Zusammenfassung

Eine Aufsammlung von Rindenwanzen (Heteroptera, Aradidae) aus der Panguana Forschungstation im Amazonas-Regenwald von Peru ergab 21 Arten, die zu 12 Gattungen der Unterfamilien Aneurinae (1) und Mezirinae (11) gehören. Sechs Arten (*Dysodius equatorianus* KORMILEV, 1975; *Lobocara oblonga* BERGROTH, 1892; *Mezira boliviana* KORMILEV, 1962; *Mezira handlirschi* (BERGROTH, 1898); *Phyllotingis eximia* (HAGLUND, 1868); *Santaremia robusta* KORMILEV, 1960) sind neu für die Fauna von Peru und eine neue Art *Aneurillus dillerorum* sp.n. wird beschrieben und abgebildet.

### References

- BERGROTH, E. 1892: Aradidae Novae. – Revue d'Entomologie **11**: 259-261.
- BERGROTH, E. 1898: Aradides Nouveaux. – Bulletin du Muséum d'Histoire Naturelle, Paris **3**: 149-151.
- BURMEISTER, H. C. C. 1835-1839: Handbuch der Entomologie. Volume II. 1835 (1): i-xii, 1-400; 1839 (2): 757-1050. – T. Enslin, Berlin.
- CHAMPION, G. C. 1898: Family Aradidae. – In: Biologia Centrali Americana. Insecta. Rhynchota **2**: 65-17.
- COSCARÓN M. C. & E. F. CONTRERAS 2012: Catalog of Aradidae (Hemiptera: Heteroptera) for the Neotropical Region. – Zootaxa **3466**: 1-103.
- CURTIS, J. 1824-1839: British Entomology; being illustrations and descriptions of the genera of insects found in Great Britain and Ireland; containing coloured figures from nature of the most rare and beautiful species, and in many instances of the plants upon which they are found. 16 vol., 769 plate-sheets. [The above mentioned dates, 1824-1839 follow China, 1943, 217-218].
- DILLER, J. 2016: Biologische Forschungsstation und Naturschutzgebiet Panguana im Regenwald von Peru. URL: [www.panguana.com](http://www.panguana.com). (Accessed: 15.07.2016).
- DOUGLAS, J.W. & J. SCOTT 1865: The British Hemiptera. Volume I. Hemiptera-Heteroptera. R. Hardwicke, London, xii+627 pp.
- FABRICIUS, J. C. 1795: Rhyngota. In: Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species, adjectis synonymis, locis, observationibus, descriptionibus, **4**, [I-IV], pp. 1-229.

- FABRICIUS, J. C. 1803: *Systema Rhyngotorum secundum ordines, genera, species, adjectis synonymis, locis, observationibus, descriptionibus.* – C. Reichard, Brunsvigae, 335 pp.
- HAGLUND, C. J. E. 1868: *Hemiptera nova.* – Stettiner Entomologische Zeitung **29**: 150-163.
- HEISS, E. 1989: Studies on African Aradidae III: Two new species of Aneurinae from Zaire and Aldabra Islands (Heteroptera, Aradidae). – Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen **41**(3-4): 94-98.
- HEISS, E. 1990: A review of the genus *Dysodius* LEPELETIER & SERVILLE, 1828, with descriptions of two new species (Heteroptera: Aradidae). – Anales del Instituto de Biología de la Universidad Nacional Autónoma de México, Ser. Zool. **61**(2), 279-296.
- HEISS, E. 1999: Revision of Indo-Pacific *Aneurillus* KORMILEV 1968, I. Description of a new genus and two new species (Heteroptera, Aradidae, Aneurinae). – Linzer Biologische Beiträge **31**(2): 1009-025.
- HEISS, E. 2009: Review of the Neotropical genus *Hesus* STÅL, 1862 with description of a new species (Heteroptera, Aradidae). – Linzer Biologische Beiträge **41**(1): 343-357.
- HEISS, E. 2016: Review of the Neotropical genus *Helenus* WHITE, 1879, with description of a new species (Hemiptera: Heteroptera: Aradidae). – Zootaxa **4088**(4): 555-562.
- KORMILEV, N. A. 1953: Aradidae (Hemiptera) Argentinae II. – Acta Zoologica Lilloana, **13**: 207-256.
- KORMILEV, N. A. 1960: Notes on Neotropical Aradidae XI (Hemiptera). – Journal of the New York Entomological Society, **68**: 208-220.
- KORMILEV, N. A. 1962: Notes on Aradidae in the Naturhistoriska Riksmuseum, Stockholm. Hemiptera - Heteroptera. – Arkiv för Zoologi, series 2, **15**(14): 255-273.
- KORMILEV, N. A. 1964: Notes on Aradidae in the U.S. National Museum III. Subfamily Mezirinae (Hemiptera). – Proceedings of the United States National Museum, **115**(3483): 245-258.
- KORMILEV, N. A. 1968: Notes on Neotropical Aradidae XVII. Aradidae in the Field Museum of Natural History, Chicago, Illinois (Hem. - Heteroptera). – Annales de la Société Entomologique de France, n.s. **4**(2): 279-289.
- KORMILEV, N. A. 1971: Key to American species of the genus Mezira (Hemiptera: Aradidae). – Proceedings of the Entomological Society of Washington **73**: 282-292.
- KORMILEV, N. A. 1974: Aradidae in the Rijksmuseum van Natuurlijke Historie, Leiden (Hemiptera - Heteroptera). – Zoologische Mededelingen, **48**(21): 233-247.
- KORMILEV, N. A. 1975a: Neotropical Aradidae in the collections of the California Academy of Sciences, San Francisco (Hemiptera - Heteroptera). – Occasional Papers of the California Academy of Science, **122**: 1-28.
- KORMILEV, N. A. 1975b: Notes on Neotropical Aradidae XX (Hem. Heteroptera). – Eos, **49**: 219-224.
- KORMILEV N. A. & R. C. FROESCHNER 1987: Flat Bugs of the World. A Synonymic List (Heteroptera: Aradidae). – Entomography, **5**: 1-246.
- OSHANIN, B. F. 1908: Verzeichnis der palaearktischen Hemipteren mit besonderer Berücksichtigung ihrer Verteilung im Russischen Reiche. – Annaire du Musée Zoologique de l'Académie Impériale des Sciences, **I**(2): 395-586.
- STÅL C. 1873: *Enumeratio Hemipterorum: Bidrag till en företeckning öfver alla Hittils kända Hemiptera, jemte systematiska meddelanden. Parts I-V.* – Kongliga Svenska Vetenskaps - Akademiens Handlingar, **III**(11): 1-163
- WHITE, F. B. 1879: Description of new Hemiptera. I. – Journal of the Linnaean Society of London, Zoology, **14**: 482-489.

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