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A REVIEW OF THE GENUS *TRIPHYSA* ZELLER, 1858 (LEPIDOPTERA, SATYRIDAE)

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A review of the genus *Triphysa* Zeller, 1858 is presented. One new species *Triphysa issykkulica* **sp. n.** (type locality: Kazakhstan, W of Almaty, 800 m) and 8 new subspecies are described: *Triphysa phryne kasikoporana* **ssp. n.** (type locality: Kasikoporan [NE Turkey, Agri prov.]), *Triphysa striatula urumtchiensis* **ssp. n.** (type locality: Urumtchi), *Triphysa issykkulica pljustchi* **ssp. n.** (type locality: W. Kirgiziya, Talasskii Mts., Manas), *Triphysa nervosa tuvinica* **ssp. n.** (type locality: N. Tuva, near Kyzyl, Tuge Mt.), *Triphysa nervosa arturi* **ssp. n.** (type locality: S. Tuva, 15 km WSW Erzin), *Triphysa nervosa kobdoensis* **ssp. n.** (type locality: W. Mongolia, Hovd aimak, 15 km S Khara-Us-Nuur lake, 1300 m), *Triphysa nervosa mongolaltaica* **ssp. n.** (type locality: Mongolia, Hovd aimak, Bulgan-Gol basin, middle stream of Ulyasutai-Gol river, 2500–3000 m) and *Triphysa nervosa brinikhi* **ssp. n.** (type locality: Russia, Chita Reg., Onon distr., 18 km WSW Nizhniy Zasuchey vill., Butyvken lake, *Pinus* forest, steppe) are described. New status for *Triphysa striatula* Elwes, 1899, **stat. n.** is established. The lectotypes of *Triphysa nervosa gartoki* O. Bang-Haas, 1927, *Triphysa phryne kintschouensis* O. Bang-Haas, 1939, *Triphysa phryne biocellata* Staudinger, 1901, *Triphysa nervosa tscherski* Grun-Grshimailo, 1889 [1890], *Triphysa nervosa glacialis* A. Bang-Haas, 1912 are designated, the neotype of *T. dohrnii* Zeller, 1850 (type locality: [Russia], Sarepta) is designated.

Key words: Lepidoptera, Satyridae, *Triphysa*, fauna, new species, new subspecies, Palaearctic.

INTRODUCTION

Triphysa Zeller, 1758 (Lepidoptera: Nymphalidae, Satyrinae, Coenonymphini) is a widely distributed genus of palaearctic Papilionoidea in South-East Europe and North and Central Asia.

The genus *Triphysa* Zeller, 1858 was synonymized to *Coenonympha* Hübner, 1819 by Kodandaramaiah et al. (2009) in the study targeted to phylogeny of the genus *Coenonympha*. In their second paper dealing with *Coenonympha* phylogeny, they followed this synonymisation (Kodandaramaiah et al., 2010). On the other hand, the synonymisation was rejected by many lepidopterists (V.V. Dubatolov, S.K. Korb, R.V.



Yakovlev, L.V. Bolshakov, M.A. Klepikov, P.Y. Gorbunov and many others in Russia; V.V. Tshikolovets, K.A. Efetov, A. Kočak, M. Kemal, G.C. Bozano, A. Hausmann and many others in West Europe etc.) due to two reasons: 1) no morphological structures have been studied and analyzed in cited works; 2) no methods to determine generic level differences using molecular phylogeny was present at the time of these papers' publication (now these methods are proposed (see for example: Talavera et al., 2012), but they are very questionable and should be confirmed by additional research.

As an answer to the cited papers, the research of morphology and molecular data in tribus Coenonymphini was published by S.K. Korb, L.V. Bolshakov, (2011a): in this paper showed that *Triphysa* is a separate genus, *Coenonympha* is a separate and monotypic genus, the rest of *Coenonympha* s.l. was transferred to another genus *Chortobius* [Dunning et Pickard], 1858, stated that *Lyela* Swinhoe 1908 is a separate genus as well and finally the authors described a new genus *Disommata* Korb et Bolshakov, 2011 with type species *Coenonympha nolckeni* Erschoff, 1874. We do not see any reasons to synonymize *Triphysa* to *Coenonympha* as it has huge and constant differences from all other genera of Coenonymphini and forms a monophyletic group in the phylogenetic tree.

In any point of view, genus *Triphysa* should be revised. The current work performs this purpose.

The first species of this genus was described by P. Pallas (1771) from the environs of Syzran (now a city in the Samara region, southeastern part of European Russia) as *Papilio phryne* Pallas, 1771. A bit later, apparently based on P. Pallas material from Siberia, the description of *Papilio tircis* Cramer, 1782 was published. Much later, in the middle part of the XIX century, the description of *Triphysa dohrnii* Zeller, 1858 was published. Unfortunately, the description of the latter taxon was published without illustration nor information about the collecting locality. Moreover, the type specimen of this taxon disappeared, and even its alleged place of origin remained unknown (Grum-Grshimailo, 1899; 1948); it was not found in BMNH along with most other P.C. Zeller types.

Then the description of *T. nervosa* Motschoulsky, 1866 from Japan was published. However, as we know, the representatives of this species do not inhabit Japan. O. Staudinger (1892: 208) doubted the correct type locality of *T. nervosa*: «*Tr. Nervosa* Motsch. von Japan, schon früher beschrieben, soll, wie mir bestimmt versichert wurde, diese Art sein; ich kann dies leider nicht nachsehen, aber der Name spricht allein schon dafür. Elwes meint, dass sie nie auf Japan gefunden sei, und Motschulsky Amur-und Japan-Lepidopteren öfters vermischt habe».

Most likely there was a mix-up of two parcels from Mrs. E.S. Gaschkewitsch who collected the material on Amur and in Japan, which served as the basis for two articles of Motschulsky (Dubatolov et al., 2010). These parcels were processed and the results of this processing were published simultaneously (Motschulsky, 1866;

Motschoulsky, 1866). Later the following taxa of *Triphysa* were described: *T. albovenosa* Erschoff, 1877 from Blagoveshchensk environs, *T. phryne tscherskii* Grum-Grshimailo, 1899 (1900) from North-Western and Central Yakutia, *T. phryne striatula* Elwes, 1899 from Korla (China, Xinjiang, eastern Tien Shan), *T. phryne biocellata* Staudinger, 1901 from Qinghai (Tibet, China), *T. glacialis* A.Bang-Haas, 1912 from Arasagun Gol (now: Argasyn Gol river, Eastern Sayan, Khubsugul Aimag of Mongolia), *T. phryne gartoki* O.Bang-Haas, 1927 from Gartok (now: Garyarsa, Northwest Tibet, China), *T. phryne yonsaensis* Im, 1988 from North Korea.

V. Lukhtanov, A. Lukhtanov (1994) found that in Siberia, according to the structure of the male genitalia, there are two species of this genus: *T. phryne* in the steppes of West Siberia, and *T. dohrnii* in the mountainous regions of West Siberia, East Siberia and Far East. Because the type locality of *T. dohrnii* remains undefined (Grumm-Grshimailo, 1889; 1890) and *T. nervosa* has incorrect type locality, Y. P. Korshunov, P. Y. Gorbunov (1995) proposed to use for the second Siberian species the name *T. albovenosa*. One year later Y.P. Korshunov (1996) described *T. albovenosa sacha* Korshunov, 1996 from the vicinity of Yakutsk.

The last short review of this genus was published by G.C. Bozano (2002); he did an overview of *Triphysa* with implausible maps of areas and some geographical errors; also he followed V. Lukhtanov, A. Lukhtanov (1994) that the correct name for the second Siberian species is *T. dohrnii*. In recent years we accumulated a lot of new data, revised some private and museum collections and the major part of type material belonging to this genus; this is the basis of the current paper.

It is very important to note that most of the known *Triphysa* populations are local, and there is no clinal variability between them because there are no intermediate populations present. The transitions between subspecies exist only in East Asia between Baykal, Yakutia and the Upper Amur. It is a good basis for active speciation and the reason for a big number of subspecies. Also it is important to note that most *Triphysa* species forms subspecies in pairs, plain and mountainous; these subspecies have different phenology and are well separated by flight periods, and distributional altitudes.

List of abbreviations

ASV – private collection of A. Samus (Volgograd, Russia)

ENH – private collection of E. Novomodny (Khabarovsk, Russia)

IPK – private collection of I. Plyustch (Kiev, Ukraine)

ISEAN – Institute of Systematic and Ecology of Animals (Novosibirsk, Russia)

LNK – Landessammlungen für Naturkunde (Karlsruhe, Germany)

MCK – private collection of M. Černila (Kamnik, Slovenia)

MHUB – Museum für Naturkunde an der Humboldt Universität zu Berlin (Berlin, Germany)



MWM – Museum of Thomas Witt (Munich, Germany)
RYB – private collection of R. Yakovlev (Barnaul, Russia)
SCR – private collection of S. Churkin (Reutov, Russia)
SKNN – private collection of S. Korb (Nizhnij Novgorod, Russia)
SRU – private collection of S. Rudykh (Ulan-Ude, Russia)
UPU – Ul'yanovsk Pedagogical University (Ulyanovsk, Russia)
ZFMK – Zoologisches Forschungsinstitut und Museum Alexander Koenig (Bonn, Germany)
ZISP – Zoological Institute, Russian Academy of Sciences (St.-Petersburg, Russia)
ZMKU – Zoological Museum of the Kiev University (Kiev, Ukraine)
ZMMU – Zoological Museum of the Moscow University (Moscow, Russia)
ZSSM – Zoologische Staatssammlung der Bayerischen Staaten (Munich, Germany)
кбвкН – Butterflies collection of Grand Duke Nikolay Mikhailovich [Romanoff]

Catalogue of the genus *Triphysa* Zeller, 1858

Triphysa phryne (Pallas, 1771)

- *Triphysa phryne phryne* (Pallas, 1771) (steppes from Crimea to West Siberia)
- *Triphysa phryne kasikoporana* **ssp. n.** (NE Turkey)

Triphysa striatula Elwes, 1899, **stat. n.**

- *Triphysa striatula striatula* Elwes, 1899 (Korla)
- *Triphysa striatula urumtchiensis* **ssp. n.** (Urumchi)

Triphysa issykkulica **sp.n.**

- *Triphysa issykkulica issykkulica* (Northern and Central Tian-Shan Mts.)
- *Triphysa issykkulica pljustchi* **ssp. n.** (Talas Mts. in West Tian-Shan)

Triphysa nervosa Motschoulsky, 1866

- *Triphysa nervosa glacialis* A. Bang-Haas (Altai-Sayan Mts., Tannu-Ola Mts., Minusinsk Valley, mountains of northern Baikal).
- *Triphysa nervosa tuvinica* **ssp. n.** (Central Tuva depression)
- *Triphysa nervosa arturi* **ssp. n.** (Ubsunur depression)
- *Triphysa nervosa kobdoensis* **ssp. n.** (Great Lakes depression)
- *Triphysa nervosa mongolaltaica* **ssp. n.** (Mongolian Altai)



- *Triphysa nervosa biocellata* Staudinger (= *kintschouensis* O. Bang-Haas) (Qinghai, Sichuan, Nei Mongol, Southern Manchuria, North-Eastern Mongolia, Selengan Dauria, dry steppes of SE Transbaikalia)
- *Triphysa nervosa gartoki* O. Bang-Haas, 1927 (Tibet)
- *Triphysa nervosa brinikhi* **ssp. n.** (forest steppes of eastern part of the Transbaikalian region)
- *Triphysa nervosa nervosa* Motschoulsky, 1866 (= *albovenosa* Erschoff; = *yonsaensis* Im) (northern part of West Siberian Plain, Chita Prov., south-western and mountains of North-Eastern Yakutia, Amur Prov., Ussuri Prov., Magadan Prov., West Chukotka in Russia, Korea).
- *Triphysa nervosa tscherskii* Grum-Grshimailo, 1889; 1890 (NW and Central Yakutia, southern part of Yana river Valley)

Genus *Triphysa* Zeller, 1850

Entomol. Zeitung, Stettin **11**: 308.

Type species: *Papilo tircis* Stoll, 1782 (Hemming, 1967: 449).

Diagnosis of the genus

Medium size butterflies, forewing length 17.0 – 23.0 mm. Wings in males dark, brown or grey; wings in females white. Upperside with characteristic light suffusion along veins. Black spots with white centers present at least in forewing upperside in males; in underside these spots are always present in both wings. In the male genitalia tegumen is domed, uncus longer than tegumen, apex of uncus rounded. Valva wide, apex of valva pointed. Aedeagus longer than valva, with characteristic large spikes on its apical part. In the female genitalia the signum shorter than 1/4 of bursa copulatrix (in *Coenonympha* s.l. and *Lyela* it is about 1/2 of its length).

From all genera of Coenonymphini *Triphysa* differs by the following features:

- In female genitalia signum shorter than 1/4 of bursa copulatrix;
- In male genitalia aedeagus with spikes in its apex;
- In male genitalia valva is wide (width/length = 2/1);
- Tegumen domed;
- Gnathos 2 times or less shorter than uncus;
- Males and females have opposite wing coloration (males dark, brown or grey, females light, white);
- Upperside of wings with characteristic light suffusion along the veins.

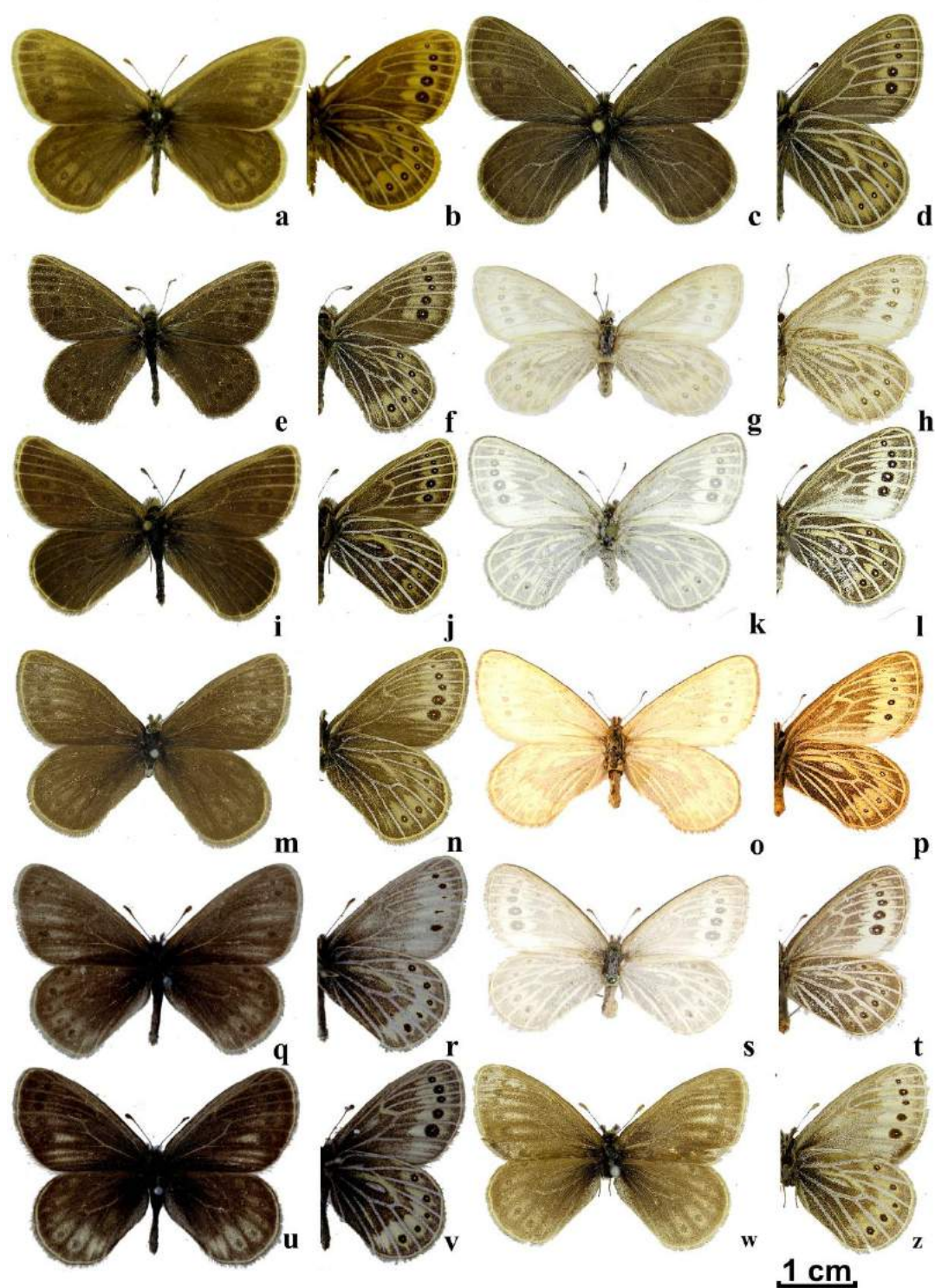


Figure 1



Figure 2

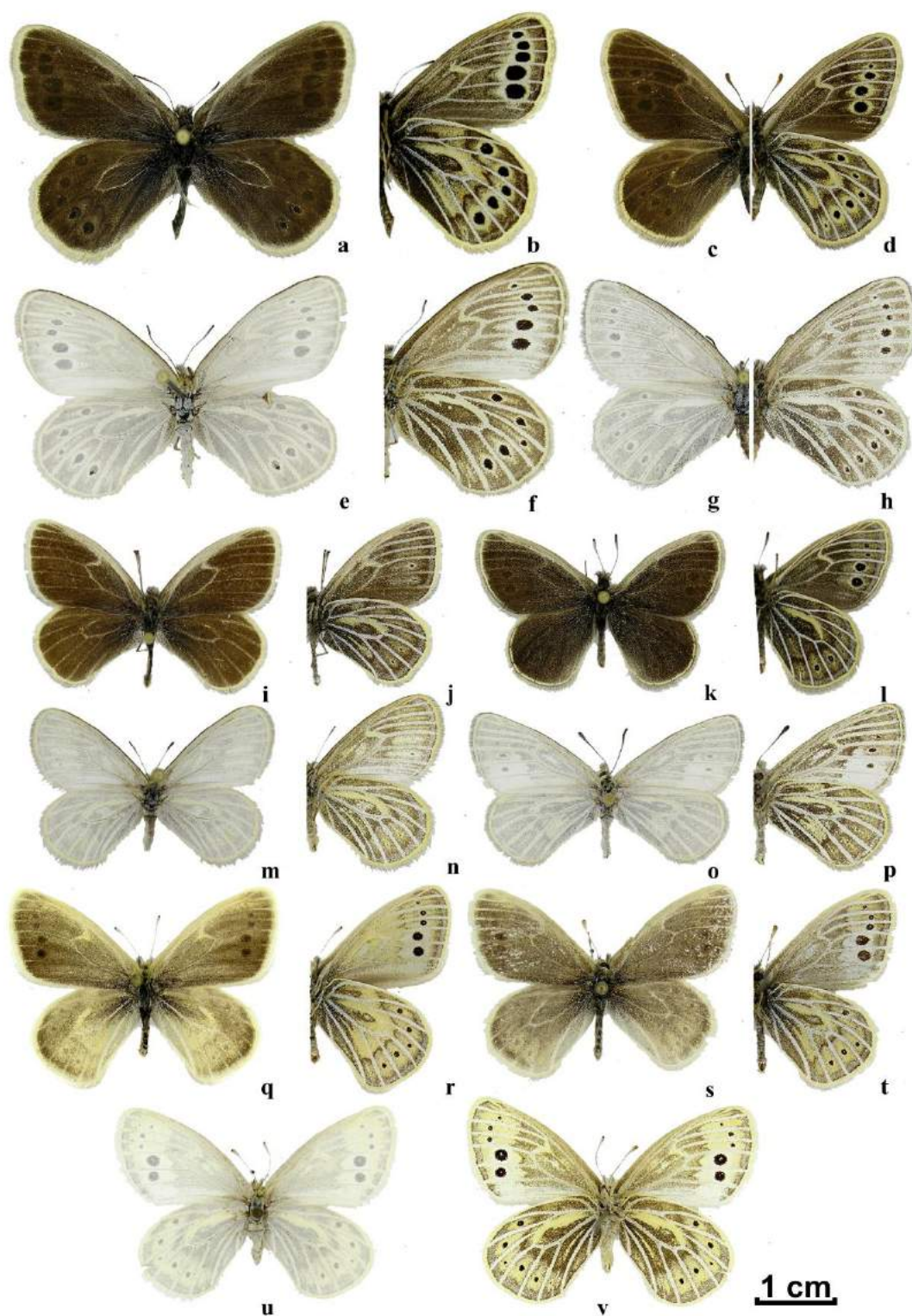


Figure 3

Figure 1. *Triphysa* sp., imago: a – neotype of *Triphysa dohrnii* Zeller, 1858 (ZISP), upperside, b – underside; c – *T. phryne*, male, Crimea, Dzhankoj distr., near Yasnopolyanskoe vill., 25.04.2009, leg. Savchuk V. (RYB), upperside, d – underside; e – *T. phryne*, Russia, S. Ural, Kuvandyk, 15.05.1996, leg. V. Barkhatov (RYB), upperside, f – underside; g – *T. phryne*, female, same locality, 1-10.06.1995 (RYB), upperside, h – underside; i – *T. phryne*, male, Russia, Altai Krai, Ugly distr., Lyapunovo, 9.05.2003, leg. D. Ryzhkov (RYB), upperside, j – underside; k – *T. phryne*, female, E. Kazakhstan, Manrak Mts., near Zhanaul vill., 1100 m, 47°14' N, 84°35' E, 3.06.2003, leg. R. Yakovlev (RYB) upperside, l – underside; m – *T. phryne kasikoporana* ssp. n., holotype (ZISP), upperside, n – underside; o – *T. phryne kasikoporana* ssp. n., paratype, female (ZSSM), upperside, p – underside; q – *T. striatula*, cotype, male (MHUB), upperside, r – underside; s – *T. striatula*, cotype, female (MHUB), upperside, t – underside; u – *T. striatula*, cotype, male (MHUB), upperside, v – underside; w – *T. striatula*, cotype, male (ZISP), upperside, x – underside.

Figure 2. *Triphysa* sp., imago: a – *T. striatula urumtshiensis*, holotype (ZISP), upperside, b – underside; c – *T. issykkulica* sp. n., holotype (ZISP), upperside, d – underside; e – *T. issykkulica* sp. n., paratype, male, Kirgiziya, Issyk-Kul' reg., Sarydzhas, S slope of Inylchek Mts., Tashkoro, 3100 m, 4.07.1986, I. Pljustch (ISEAN), upperside, f – underside; g – *T. issykkulica* sp. n., paratype, female, 03.05.2009, Kazakhstan, W of Almaty, 800 m., leg. P.Egorov (SKNN), upperside, h – underside; i – *T. issykkulica pljushchi* ssp. n., holotype (ZMKU), upperside, j – underside; k – *T. issykkulica pljushchi* ssp. n., paratype (ZMKU), upperside, l – underside; m – *T. nervosa glacialis*, lectotype (MHUB), upperside, n – underside; o – *T. nervosa glacialis*, paralectotype, female (MHUB), upperside, p – underside; q – *T. nervosa glacialis*, male, SE Altai, Ukok plateau, Mai-pak, H – 2300 m, 29.06-3.07.1997, R. Yakovlev (RYB), upperside, r – underside; s – *T. nervosa glacialis*, female, SE Altai, Ukok plateau, Mai-pak, H – 2300 m, 29.06-3.07.1997, R. Yakovlev (RYB), upperside, t – underside; u – *T. nervosa glacialis*, male, W. Buryariya, Mondy, 21.06.2002 (RYB), upperside, v – underside; w – *T. nervosa glacialis*, female, W. Buryariya, Mondy, 21.06.2002 (RYB), upperside, x – underside.

Figure 3. *Triphysa* sp., imago: a – *T. nervosa tuvinica*, holotype (ISEAN), upperside, b – underside; c – *T. nervosa tuvinica*, paratype, male (RYB), upperside, d – underside; e – *T. nervosa tuvinica*, paratype, female (RYB), upperside, f – underside; g – *T. nervosa tuvinica*, paratype, female (RYB), upperside, h – underside; i – *T. nervosa arturi*, holotype (ISEAN), upperside, j – underside; k – *T. nervosa arturi*, paratype, male (RYB), upperside, l – underside; m – *T. nervosa arturi*, paratype, female (RYB), upperside, n – underside; o – *T. nervosa arturi*, paratype, female (ISEAN), upperside, p – underside; q – *T. nervosa kobdoensis*, holotype (ZISP), upperside, r – underside; s – *T. nervosa kobdoensis*, paratype, male (RYB), upperside, t – underside; u – *T. nervosa kobdoensis*, paratype, female (RYB), upperside, v – underside.



Figure 4



Figure 5

Figure 4. *Triphysa* sp., imago:

- a – ***T. nervosa mongolaltaica*, holotype (ZISP), upperside, b – underside;
c – *T. nervosa mongolaltaica*, paratype, male (RYB), upperside, d – underside;
e – *T. nervosa mongolaltaica*, paratype, female (RYB), upperside, f – underside;
g – *T. nervosa mongolaltaica*, paratype, female (RYB), upperside, h – underside;
i – *T. nervosa biocellata*, lectotype (MHUB), upperside, j – underside;
k – *T. nervosa biocellata*, paralectotype, female (MHUB), upperside, l – underside;
m – *T. nervosa biocellata* (lectotype *T. phryne kintschouensis*) (MHUB), upperside,
n – underside;
o – *T. nervosa biocellata* (paralectotype, female *T. phryne kintschouensis*) (MHUB),
upperside,
p – underside; q – *T. nervosa biocellata*, male, Russia, Buryatia Rep., Gusinoe Ozero
vill., steppe rivulet valley, 25.05.2002, leg. Shevnin (RYB), upperside, r – underside;
s – *T. nervosa biocellata*, female, Russia, Buryatia Rep., Gusinoe Ozero vill., steppe
rivulet valley, 25.05.2002, leg. Shevnin (RYB), upperside, t – underside;
u – *T. nervosa gartoki*, lectotype (MHUB), upperside, v – underside.

Figure 5. *Triphysa* sp., imago:

- a – *T. nervosa brinikhi*, holotype (ISEAN), upperside, b – underside;
c – *T. nervosa brinikhi*, paratype, female (ISEAN), upperside, d – underside;
e – *T. nervosa tscherskii*, male, lectotype (ZISP), upperside, f – underside;
g – *T. nervosa tscherskii*, female, Yakutsk, 29.05.1985, V. Dubatolov leg. (ISEAN),
upperside, h – underside;
i – *T. nervosa nervosa*, male, Russia, Chita reg., near Naminga vill., 4.07.2002, leg. V.
Ivonin (RYB), upperside, j – underside;
k – *T. nervosa nervosa*, male, Amur reg., Blagoveshensk, 17.05.1995, leg. A. Streltsov
(RYB), upperside, l – underside;
m – *T. nervosa nervosa*, female, Amur reg., Blagoveshensk, 17.05.1995, leg. A. Streltsov
(RYB), upperside, n – underside;
o – *T. nervosa nervosa*, male, N. Ural, Malaya Sos'va Reserve, 14.06.1989 (ISEAN),
upperside, p – underside.

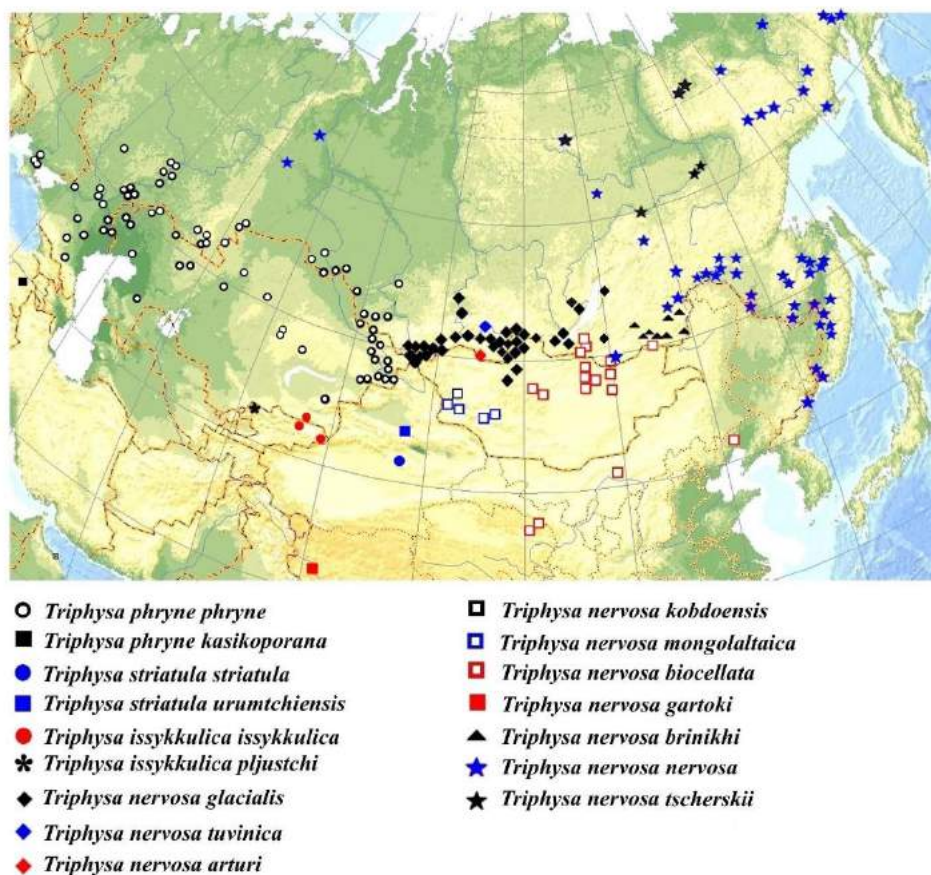


Figure 6. Distribution map of *Triphysa* species: a – general map; b – northern-eastern part of area of *T. nervosa nervosa*.

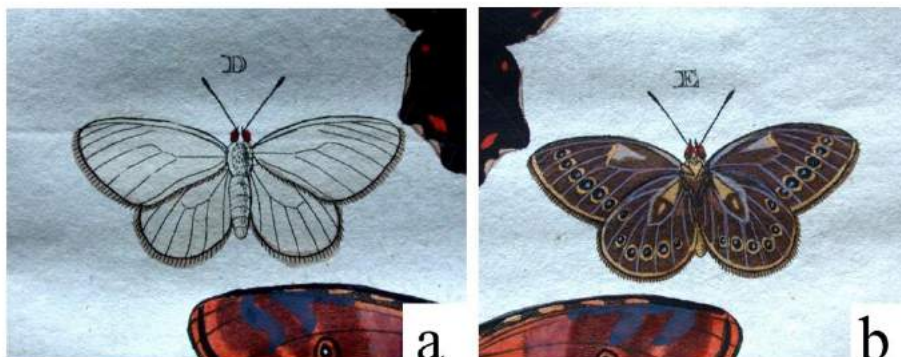


Figure 7. *Papilio tircis* Cramer (from Cramer 1777): a – upperside; b – underside.

Triphysa phryne (Pallas, 1771)

Triphysa phryne phryne (Pallas, 1771)

Figs. 1a–l, 6a, 7, 8, 20.

Papilio phryne Pallas, 1771; Reise Prov. Russ. Rieches: 572. Type locality: “Volgae versus Sysranum”. [Kostychi vill., near Oktyabr’skij, Syzran’ distr., Samara region, Russia].

=*Papilio tircis* Cramer, 1777; Papil. Exot. 4: 373, T. 373, f. D, E. Type locality: “... de la Siberie” [Siberia].

=*Triphysa* (*Phryne* HS.) *Dohrnii* Zeller, 1850; Entomol. Zeitung, Stettin 11: 308. Type locality: “südlichen Russland” [South Russia], Sarepta, according to the neotype designation.

Systematic notes. *Papilio phryne* Pallas described from “Volgae versus Sysranum”. Its type locality corrected by S. Sachkov (1991) – Kostychy village in the town Oktyabrsky environs, Samara Prov., Russia.

Papilio tircis Cramer described from a female specimen from Siberia, the text description is unclear but has two pictures: upper side and very schematized underside (Fig. 7). However, the most obvious characteristic features in these pictures are well visible: postdiscal spots are almost equal in size, eyespots always with white centers and surrounded by narrow yellowish borders. These features are identical to the habitus of *Triphysa phryne* Pall. Type material of this species was collected most likely by P.S. Pallas somewhere from Omsk region to Western Altai, no other material known from this region of Russia at this time.

Triphysa dohrnii Zeller was described from South Russia and its status was unclear. The main feature for this taxon is a rather wide pale edge on wings upperside, but comparable in width to the border on the underside. We can

conclude that the upperside fringe is actually not very wide. In comparison to *T. dohrnii* and *T. tircis*, it is not specifically indicated if there is a difference in the presence or absence of white centers in eyespots. But because in *T. tircis* the bright centers in eyespots are well developed (almost certainly), the same should be present in *T. dohrnii* too, or it would have been indicated otherwise. Another important feature, suggesting the position of *T. dohrnii* as a synonym of *T. phryne*, is the presence of a rather complex pattern located basally from the postdiscal band. This pattern is very unclearly described in the original description. On the other hand, weak whitish veins on the hindwings underside, which usually are in *T. phryne*. Among the Siberian populations of *Triphysa* (excluding the West Siberian Plain, where only *T. phryne* occurs) the white centers of postdiscal eyespots are only in specimens from the steppes of southern Transbaikalia, but in these specimens there are always two large cubital eyespots on the forewing underside. This characteristic feature would necessarily be mentioned by P.C. Zeller, if his *T. dohrnii* had originated from Transbaikalia. That is why we take the point of view that P.C. Zeller described an aberrant specimen of *T. phryne*. The type locality mentioned in the original description is South Russia (not any areas of Siberia!). Basically, during the first half of the XIX century, P.C. Zeller could have had Siberian specimens of a species other than *phryne* only from two potential areas and collectors: Altai Mountains (from F.A. Gebler) or Southern Transbaikalia (from G.I. Fischer von Waldheim). Specimens from these areas must have a light border on the upperside wings, but the Altai specimens are always without white centers in the postdiscal eyespots on the underside, and the South-Transbaikalian specimens are always with huge cubital eyespots on the upperside of the forewing. That is why we cannot consider *T. dohrnii* identical to any Siberian specimens. The lightening of the pattern along the outer margin in South Russian males *T. phryne*, though very rarely, but occurs; it is also one of the arguments for the species identity of *T. phryne* and *dohrnii*.

H.C. Lang (1884: 814) listed *T. dohrnii* as an aberration with light underside that flies together with typical individuals. Thus once more the European origin of *T. dohrnii* type specimens and its use for light specimens of *T. phryne* was considered.

G. Grumm-Grshimailo (1899; 1948) indicated that the type material of *T. dohrnii* was lost; it was not found in BMNH (see above). It is impossible to understand the status and position of almost all taxa of *Tryphysa* without the neotype designation of *T. dohrnii*. Therefore, we make a decision to designate the lightest *T. phryne* specimen as the neotype of *T. dohrnii*. The neotype male, **designated here**: collected in Russia, Low Volga, Volgograd distr., Sarepta, 611 (ZISP).

Diagnosis. The characteristic feature in the male genitalia is a very short gnathos. Apex of valva in nominotypical and closely related subspecies is curved dorsally and sharpened. 20 specimens have been dissected.

Type material. The type material of *T. phryne* may be lost, but in the literature there is no reference about this. V. Zolotukhin (pers. comm.) suggests quite a high



probability that P. Pallas type specimens could be preserved in Kunstkamera Museum (St.-Petersburg, Russia), but access to the repository of this museum is prohibited.

T. phryne was erroneously recorded from Central Mongolia (Igarashi et al., 2001); the figured specimen is an aberrative male of *T. nervosa glacialis*.

Material examined. Neotype (*Triphysa dohrnii* Zeller, 1858), male, Sarepta, 611 (ZISP); **Ukraine:** 1 male, Ukraine, Askaniya-Nova, 27-V-1974 (ISEAN); **Russia:** 1 male, Crimea, Dzhankoi distr., near Yasnopolyanskoe vill., 25-IV-2009, leg. Savchuk V. (RYB); 2 males, Kamyschin cEv, 12 May (ZISP); 2 females, Iletzk Maj (ZISP); 1 male, 1 female, Spask Camp. Orenb. cAP (ZISP); 1 male, Sarat[ov] cA (ZISP); 3 males, 2 females, Sarept. cAP (ZISP); 2 males, 1 female, Sarepta cAP (ZISP); 1 male, Sarepta (ZISP); 1 female, Beck. Sarept., coll. Erschoff (ZISP); 3 males, 2 females, Sarepta, coll. Erschoff (ZISP); 2 males, 2 females, Sarepta кбвкHM (ZISP); 1 male, 1 female, Sarepta (ZISP); 1 female, Sarepta, coll. Avinoff (ZISP); 1 male, 1 female, Volgograd, 2.VI-[19]64 (ZISP); 1 male, Volgograd Prov., Kletskoe distr., 4 km W Saushkin village, 17.05.2006, leg. E.V. Zvetkov (ZISP); 2 female, Volgograd Prov., left bank Bol. Goluboj river, 21.05.2006, leg. E.V. Zvetkov (ZISP); 1 female, Russia, Low Volga, Volgograd distr., Golubaya riv. basin, Kamyshinskii vill., 200 m, 15-25-V-1997, S. Andreev leg. (RYB); 3 males, Russia, Volgograd reg., Olkhovka distr., Stefanidovka vill., 12-VII-2007, A.N. Samus leg. (ASV); 1 male, Volgograd reg., Ilovlya distr., Trekhostrovkaya vill., 20-V-2007, leg. A.N. Samus' (ASV); 1 male, Volgograd, Kirovskij distr., Gornaya Polyana, 10-VI-2003 (ASV); 1 male, 1 female, Volgograd reg., Pallasovka distr., Elton lake west coast, 22-V-2011, leg. A.N. Samus' (ASV); 1 female, Volgograd reg., Angarskii settl., 23-V-2003, leg. A.N. Samus' (ASV); 5 females, Ul'yanovsk reg., Radishevo distr., 160 km S Ul'yanovsk, Ryabina station, 30-V-4-VI-1993, V. Zolotuhin leg. (UPU); 10 males, 2 females, Ul'yanovsk reg., Radishevo distr., 166 km S Ul'yanovsk, 6 km S Vyazovka vill., 9.05.2000, V. Zolotuhin leg. (UPU); 5 females, same locality, 30-V-1-VI-2000 (UPU); 2 females, Ul'yanovsk reg., Novospasskoe distr., 150 km S Ul'yanovsk, near Vasil'evka vill., Kurba river, 4-VI-2000, S. Bugarin leg. (UPU); 1 male, Russia, Saratov, 1-V-1989, S. Gundorov leg. (RYB); 1 female, same locality, 27-V-1979, leg. Bochkarev (ISEAN); 1 female, same locality, 19-V-1979, leg. Bochkarev (ISEAN); 3 females, same locality, 20-V-1979, leg. Bochkarev (ISEAN); 1 male, Saratov Reg., 9-ya Dachnaya, 5-VI-1964, Kumakov leg. (ISEAN); 1 male, same locality, 7-V-1972, leg. Kumakov (ISEAN); 1 male, 2 female, Butlerow Orb [Orenburg] cAP (ZISP); 1 female, Baschk.[iria] cAP (ZISP); 2 female, Guberli Chr 20 5; 1 male, 23 5, 1 male, 25 5 (ZISP); 1 female, Gub[erli] 8.6.[18]92; 1 female, 10 6//29 5 [18]92 1f (ZISP); 1 male, Ural, 16/5 1892, A. Reison (ZISP); 1 female, S. Ural, Guberlya Mts., upper stream of Kinderlya river, 19.V.2011, E.V. Zvetkov (ZISP); 2 males, Russia, S. Ural, Kuvandyk, 15-V-1996, leg. V. Barkhatov (RYB); 1 female, same locality, 1-10-VI-1995 (RYB); 2 males, 4 females, Orenburg reg., Sol'



Iletscoe distr., near Ivanovka vill., 24-V-2002, V. Dubatolov & E. Nikolaeva leg. (ISEAN); 1 male, Orenburg reg., Sol'-Iletscoe distr., 20 km W Troitzk, 25-V-2002, V. Dubatolov & E. Nikolaeva leg. (ISEAN); 1 male, 1 female, Uralsk (ZMHU); 1 males, 1 female, Rossia mer. or. (ZMHU); 1 male, 1 female, Orenburg reg., Burtinskaya steppe, 19-V-1997, leg. I. Lubechansky (ISEAN); 1 male, Russia, S. Ural, Chelyabinskaya obl., Bredy, 7-VI-1988, leg. V. Barkhatov (RYB); 1 male, Chelyabinsk, 30-VII- (error!).1979, leg. Kuligin'sky (ISEAN); 1 female, Chelyabinsk reg., Troitzk, 17-V-1983, leg. M.F. Manapov (ISEAN); 1 female, Omsk reg., Isil'kul', VII-(error!) 1962 (ISEAN); 1 male, Omsk reg., Davydovka, 9-VI-2002, K. Ponomarev leg. (ISEAN); 1 female, 27-V-[19]23 1f, 29-V-1923 paz.N55 Omsk, V. Schuko (ZISP); 2 males, 1 female, 30-V-[1]923 Omsk, V. Schuko (ZISP); 4 males, 12 females, Novosibirsk reg., 13 km W Karasuk, Krotovaya Lyaga lake, 24-V-2-VI-1981, leg. V. Dubatolov (ISEAN); 2 females, same locality, 15-V-1982, leg. V. Dubatolov & P. Ustjuzhanin (ISEAN); 1 male, same locality, 31-V-1998, leg. V. Dubatolov (ISEAN); 1 male, 20-V-2015, Novosibirsk Prov., Iskitim District, 4 km E of Evsino village, Shipunikha River right bank, steppe, 54°32'14" N, 83°24'16" E, O.E. Kosterin leg.; 1 female, Novosibirsk Prov., Shipunikha river valley, 3-4 km SE "67 km" station, 28.05.2006, S. Ogudov leg. (coll. S. Ogudov, Novosibirsk); 2 males, Russia, Altai Krai, Ugly distr., Lyapunovo, 9-V-2003, leg. D. Ryzhkov (RYB); **Kazakhstan**: 2 males, 2 females, Zhana-Arka, Karagand.[a] Province., 5.VI.[1]958, Zagulyaev (ZISP); 1 male, 5 females, Koksengir Mt., 40 km S Zhana-Arka, Karagand.[a] Province, 31.V.[1]958, Zagulyaev (ZISP); 1 male, P.Kaz. 2.V, coll. Erschoff (ZISP); 1 female, W. Kazakhst. Prov., near Yanvarzevo, steppe, 26.V.[19]49, Martynova (ZISP); 1 female, W. Kazakhst. Prov., right bank of Byshovka, 20.V.[1]949, Martynova (ZISP); 1 female, W. Kazakhst. Prov., near Rozhkovo, 26.V.[19]49, Mart.[ynova] (ZISP); 1 female, Uralsk, B. Uvarov (ZISP); 1 female, Kirgs.Steppe (ZISP); 1 female, Kirghiz.sp., Prov. Kustanaj distr., Semiozernyj loc. Naurzum, V. Zabelina 1940 VI 4; 1 female, 1941 VI.13 coll. Tschetverikov (ZISP); 1 male, near Semipalatinsk, 3 May 1887 (ZISP); 1 male, 1 female, Central Kazakhstan, Zharkul' lake, 4-VI-1958, leg. M. Falkovitch (ISEAN); 1 female, 10 km upper Pavlodar, right bank of Irtysh river, 23-V-1980, leg. M. Sergeev (ISEAN); 1 female, Karaganda Reg., Bektau-Ata Mts., 70 km N Balkhash, 47°26'N; 74°41'E, 4-5.05.2013, leg. S. Knyazev (coll. Knyazev, Omsk); 1 male, 1 female, E. Kazakhstan, Manrak Mts., near Zhanaul vill., 1100 m, 47°14' N, 84°35' E, 3.06.2003, leg. R. Yakovlev (RYB); 1 male, 1 female, E. Kazakhstan, Tarbagataj distr., Zhagalbaily Mts., Bugaz river Valley, 47°55' N, 82°04' E, 600 m, 1-VI-2003 (RYB); 1 male, E. Kazakhstan, 20 km S Zaisan, 25-V-2000, leg. R. Yakovlev (RYB); 1 female, E. Kazakhstan, Saur Mts., Sajkan Mts., 48°11' N, 84°43' E, 1700 m, 7-8-VI-2003, leg. R. Yakovlev (RYB); 1 male, 1 female, E. Kazakhstan, 20 km SE Kurchum vill., 48°28' N, 84°06' E, 600 m, 17-V-2003, leg. R. Yakovlev (RYB); 1 male, E. Kazakhstan, Azutau Mts., Kyzyltas Mts., 48°16' N, 85°26' E, 850 m, 18-V-2003, leg. R. Yakovlev (RYB); 2 males, 2 females, E. Kazakhstan, Kalba Mts., 20 km SW Georgievka, 19-V-2000, leg.



R. Yakovlev (RYB); E. Kazakhstan, W Tarbagatai, Karaul-Tobe Mts., 790 m, 47°37' N, 80°38' E, 29-V-2003, leg. R. Yakovlev (RYB); 1 female, S Kazakhstan, Dzhungarsky Alatau, Altyn-Emel, 8-V-2001, leg. R. Yakovlev (RYB).

Distribution. Crimea, South Ukraine (westwards to "Askania-Nova" nature reserve); Russia: south of European part (from N. Caucasus (Narzan's Valley, Levokumsk distr., near Belaya Kalitva) northwards to Samara (western locality – Balashov distr.), Ul'yanovsk and Tambov Prov. (Muchkap distr., 7 km NE of Muchkapskij vill.), South Ural (Bashkiriya, Orenburg and Chelyabinsk Prov.), southern part of West Siberia, i.e. south of Omsk, Novosibirsk Provinces and Altai Krai (Ugry, Zmeinogorsk, Lokot', Rubtsovsk distr.); Kazakhstan (Ural, Guryev, Aktobe, Turgaisk, Semipalatinsk regions; Altai: mountain ridges Kalbinsky, Kurchumsky, Narymsky, Bukombai; Saur, Manrak, Tarbagatai; Dzhungarian Alatau) (Lukhtanov, Lukhtanov, 1994, Lvovsky, Morgun, 2007). It was also listed from the south regions of Ustyurt plateau (Gorbunov, 2011) and plain areas of Alma-Ata region (Zhdanko, 2005). Detailed distribution data in Volga region are in: Anikin et al. (1993), Zolotuhin (1994), Morgun (2003), Anikin (2006), Kuznetsov (2009), Ganzha (2012); in Ural: Gorbunov (1992); in Caucasus: Shkhashemishev (1973), Poltavsky (2005), Stradomsky (2008), Poltavsky, Artokhin (2012); in Western Siberia: Kosterin et al. (2007), Knyazev (2009); in Kazakhstan: Aibasov (1975), Aibasov, Zhdanko (1982) Lukhtanov et al. (2007), Gorbunov (2011) and Rubin, Yakovlev (2013).

Triphysa phryne kasikoporana Dubatolov, Korb et Yakovlev, ssp. n.

Figs. 1m-p, 6a, 21.

Description. *Male.* Forewing length 18–19 mm, wings dark-brown with pale yellow border, in some specimens the cubital area of forewing with light and hardly detectable strokes. Forewing underside dark, veins are light, all postdiscal spots with white centers. Postdiscal spots are on a background of bright lines. Underside of hindwing with postdiscal spots with white centers. White strokes in postdiscal area extended almost to the discal cell. Veins on hindwing underside are white. *Female.* Forewing length 18–20 mm. Upperside light yellow, underside pattern as in male, postdiscal spots with white centers, postdiscal light strokes are present.

Diagnosis. Postdiscal spots in males are on a background of bright lines developed much better than in *Triphysa phryne phryne*. A good difference in males of the new subspecies from the nominotypical one is in the white strokes in postdiscal area (extended almost to the discal cell). Postdiscal light strokes in females developed better than in the nominotypical subspecies

Material examined. Holotype, male, Kasikoporan [NE Turkey, Agri prov.] (ZISP). Paratypes: 1 male, 1 female, Armenia turc., Agri-Dagh, 2500–3000 m, VII (no

other data) E. Pfeiffer (ZSSM); 2 males, 2 females, Armenia, Ak-Bulak, Gerıllzone, 3000 m, 25-VI-3.VII (no other data), leg. Kotzsch (ZSSM); 1 male, 1 female, Armenien, Kotzsch (ZSSM); 1 male, 1 female, Armenien, Agri-Dagh, Juli, 2500-3000 m, leg. Kotzsch (MWM); 1 female, Kasikoporan Chr 13 6 [18]87 (ZISP); 1 female, Kasikoporan Chr 17 7 [18]82 (ZISP); 1 male, 1 female, Kasikoporan Chr 19 7 [18]82 (ZISP).

Distribution. E. Turkey: Aras Güneyi Dağları mountain ridge and possibly surrounding mountains. Local subspecies divided from nominotypical populations by the wide belt of Caucasian mountains and by the Caspian Sea.

Triphysa striatula Elwes, 1899, stat. nov.

Triphysa striatula striatula Elwes, 1899

Figs. 1q–z, 6a, 22.

Triphysa phryne striatula Elwes, 1899; Trans. Entomol. Soc. London 1899: 365. Type locality: Kuruktagh near Korla [East Tian-Shan, Xinjiang, China]. “Lastly, there is a form found in the Kuruktagh near Korla, var. *Striatula*, Stgr. (MSS.), which is distinguished by pale longitudinal striations on the fore-wing of the male. This form seems by the position of the spots to belong to *phryne* rather than to *dohrnii*” (Elwes, 1899).

Description. Forewing length 17–18 mm. Upperside with light strokes between veins. Underside with expanded light pattern (in comparison to *T. phryne*). White centers of postdiscal spots can be absent on both forewing and hindwing undersides. In addition to the white lines on the upperside, the eyespot between cubital veins on the forewing underside is somewhat larger than its neighbors.

Male genitalia. Aedeagus densely covered by teeth with caudally directed apex. Valva with much prolonged distal end and pointed obliquely truncated apex. Four specimens have been dissected.

Material examined. 1 male, Kuruktag (ZISP); 1 male, Kutscha mont., Tian-Shan, 3000 m (LNK); 4 males, 6 females, Korla (ZFMK); 2 males, 2 females, Asia centr., Koterlbei (Korla?), April – Mai 1902 (MHUB); 5 males, 3 females, Korla (MHUB); 6 males, 4 females, Tian Shan, Merzb. (ZSSM); 9 males, 15 females, Korla, Tancre coll. (ZSSM); 2 males, 2 females, Asia centr., Koter (bei Korla), Mit. V-1902 (ZMHU); 2 males, 3 females, Korla (ZISP); 1 male, 1 female, Korla, coll. Deckert (ZISP).

Distribution. China: Xinjiang: East Tian-Shan, Kuruktag, Eastern part of Boro-Khoro.



Figures 8–9. Habitats of *Triphysa*: 8 – *T. phryne phryne*, Russia, Volgograd reg. (photo by A. Samus’); 9 – *T. issykkulica*, SE Kazakhstan, Alma-Ata reg. (photo by S. Korb).



Figures 10–11. Habitats of *Triphysa*, and female of *T. nervosa glacialis* in nature: 10 – *T. nervosa glacialis*, SE Altai, Ukok plateau, near Bertek, h–2400 m (photo by R. Yakovlev); 11 – *T. nervosa glacialis* – SE Altai, near Chagan-Uzun vill., h–2200 m (photo by A. Volynkin).



Figures 12–13. Habitats of *Triphysa*: 12 – *T. nervosa tuvinica* (type locality, photo by P. Kosachev); 13 – *T. nervosa arturi* (type locality, photo by P. Kosachev).



Figures 14–15. Habitats of *Triphysa*: 14 – *T. nervosa kobdoensis* (type locality, photo by D. Ryzhkov); 15 – *T. nervosa mongolaltaica* (type locality, photo by A. Kechaikin).



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Figures 16–17. Habitats of *Triphysa*: 16 – *T. nervosa biocellata*, Central Mongolia, near Ulan-Baator (photo by A. Vaganov); 17 – *T. nervosa biocellata* (photo by O. Kosterin);



Figures 18–19. Habitats of *Triphysa*: 18 – *T. nervosa tscherskii*, near Yakutsk (photo by A. Burnasheva); 19 – *T. nervosa nervosa*, E. Yakutiya, near Ust'-Nera vill. (photo by A. Samus').

*Triphysa striatula urumtshiensis* Dubatolov, Korb et Yakovlev, ssp. n.

Figs. 2a–b, 6a, 23.

Description. Male. Forewing length 20–21 mm, wings dark-brown. Eyespots of the postdiscal row on hindwing underside are almost equal in size and very small. Very wide light suffusion along the veins is present, especially in the central cell (almost touching the internal stroke); strong overall expansion of light pattern is present. Postdiscal row of eyespots in forewing underside with band between cubital and other eyespots, cubital eyespots are slightly larger. *Female.* Forewing length 18–20 mm. Upperside white or whitish, underside pattern as in male.

Diagnosis. Slightly larger than nominotypical subspecies. There is no lightening on upperside like in *Triphysa striatula striatula*.

Material examined. Holotype, male, Urumtchi (ZISP). Paratypes: 2 males, 1 female, Turkestan, Urumtchi, Ruckbeil, 1904 (MHUB); 1 male, Kazakhstan, Boro-Khoro Mts., 35 km N of Dzarkent, Sarybel environs, 1600–2000 m, 30-VI-2010, leg. S.K. Korb (SKNN); 1 male, 1 female, Kuldscha, VII-1902 (ZSSM); 1 male, Urumtchi (ZISP).

Distribution. China: Xinjiang Prov. (Urumqi environs); Kazakhstan: eastern part of Boro-Khoro Mts.; very local. The isolation border between *T. striatula striatula* and *T. striatula urumtshiensis* ssp.n. is in high-mountainous glaciers of Boro-Khoro and Sarmin-Ula mountain ridges.

Triphysa issykkulica Dubatolov, Korb & Yakovlev sp.n.

Figs. 2c–h, 6a, 9, 24.

Description. Male. Forewing length in holotype 16 mm, in paratypes 14–17 mm. Upperside brown. Fringes gray or brownish. Underside brown, with white-greyish suffusion along the veins; forewing under surface with incomplete submarginal row of black round spots with white centers (no spot in anal region of this wing is present); hindwing underside with full submarginal row of black spots with white centers; each spot in submarginal series is located in yellowish oval elongated stroke. Discal cell of hindwing underside with yellowish short stroke. *Female.* Forewing length 12–15 mm. Wing upperside, fringes and abdomen are white, submarginal pattern of underside is visible. Underside grayish-brown, veins bright, white, and on the under surface of forewing is located an incomplete submarginal row of black rounded spots with white centers (no spot in anal region of this wing is present); on the hindwing underside the full submarginal row of black spots with white centers is present. Each spot in submarginal row is located inside of yellowish oval stroke, in some specimens these strokes form an almost full band.

Male genitalia. Tegumen helmet-like with long transverse fold from apex to base. Uncus long, with wide, rounded obtuse apex and broad base of trapezoidal

shape. Gnathos short, massive, semi-circular. Valva long, with wide base and narrow pointed apex. Ventral part of valva is wrapped. Saccus elongated, narrow, cylindrical, with smoothly rounded apex. Aedeagus massive, long (longer than valva), tapering to apex. Middle section of aedeagus is covered by small teeth, apex has large strongly sclerotized teeth. Five specimens dissected.

Diagnosis: From all other species of the genus, this one is well distinguished by the strongly sclerotized teeth on the apex of aedeagus (in other species it is not present) and by the shape of valva (especially its caudal part) and tegumen. The good external difference between the new species and others is in the antenna apex color: in the new species it is always light, yellow, or with very small dark top, whereas in other species it can be completely dark or at least half dark.

Material examined. Holotype, male, Kazakhstan, W of Almaty, 800 m, 03-V-2009, leg. P.Egorov (ZMMU). Paratypes: 3 males, 6 females, Kirgiziya, Issyk-Kul' reg., Sarydzhaz, S slope of Inylchek Mts., Tashkoro, 3100 m, 4-VII-1986, I. Pljustch (ISEAN; IPK); 2 males, 2 females, Kazakhstan, W of Almaty, 800 m, 03-V-2009, leg. P. Egorov (SKNN); 1 male, Kirghizstan, Kirghiz Mts., Krasnyi Canyon, 1600 m, 29-VI-2009, leg. S.K. Korb (SKNN); 1 male, Kirghizstan, Terskey Ala-Too Mts., 4th km road Kok-Moynok – Kochkor, 1700 m, 30-VI – 01-VII-2009, leg. A. Shaposhnikov (SKNN); 1 male, 1 female, Tian-Shan, Sjugoty Mts., 1500 m, A. Zhdanko (SCR).

Distribution. Kyrgyzstan (Issyk-Kul' reg., Central Tian-Shan: Enilchek Mts., Khan-Tengri peak area; North Tian-Shan: Kirgizskii Mts.) (Tshikolovets, 2005), Kazakhstan (Transili Alatau Mts.) (nominotypical subspecies) and West Tian-Shan (Talasskij Alatau) (ssp. *pljushchi*).

Triphysa issykkulica pljushchi Dubatolov, Korb et Yakovlev, ssp. n.

Figs. 2i–l, 6a.

Description. Male. Forewing length 18–19 mm. Postdiscal eyespots on the forewing underside with a ledge between the cubital and other spots; cubital spots are slightly larger. Upperside with no brightening, underside with small eyespots. *Female*. Forewing length 19 mm. Upperside light yellow. Underside is characteristic for this species; eyespots are very small with slightly visible white centers.

Diagnosis. Bordering on veins is narrow, without any extension (in nominotypical subspecies it has extension, so looks quite wide).

Type material. Holotype, male, W. Kirgiziya, Talasskii Mts., Manas, 9-VI-1996, I. Pljustch (ZMKU). Paratypes: 1 male, 1 female, same locality and data (IPK).

Distribution. Kyrgyzstan: West Tian-Shan: Talassky Ala-Tau Mts.

*Triphysa nervosa* Motschoulsky, 1866

Triphysa nervosa Motschoulsky, 1866; Bull. Soc. Imp. Nat. Moscou **39**: 189. Type locality: Japon (Dubatolov et al. 2010 corrected it to Amur river valley).

=*Triphysa albovenosa* Erschoff, 1877; Horae Soc. Ent. Ross. **12**: 336. Type locality: Umgebung Blagoweschensk [Russia, Far East, Amur reg., near Blagoveshensk].

Diagnosis. The main external difference from other species of this genus is the absence of white centers on eyespots in male wing undersides; the main genitalia differences are: valva triangular with sharpened apex; gnathos long, at least 3 times shorter than uncus; aedeagus s-shaped.

Triphysa nervosa nervosa Motschoulsky, 1866

Figs. 5i–p, 6a–b, 19, 32, 34.

=*Triphysa phryne yonsaensis* Im, 1988; Bull. Acad. Sci. P. R. Korea **1988** (3): 48-49. Type locality: Democratic People's Republic of Korea (North Korea), "North Hamgyong, Yonsa County, Sampori" (original spelling: "함경북도연사군삼포리").

Diagnosis. Males wings upperside with almost no white border. Wings underside with pale veins, but without postdiscal spots. Light strokes are located between the veins on hindwing underside. Few males from a series collected at the left bank of Budyumkan river in Chita Prov. have light areas in places where the eyespots should be present.

Material examined. 1 female, Malaya Sos'va Reserve, Northern Ural, estuary of Potlokh [Potlokh-Yugan] river, 14.VI 1989; 3 males, 1 female, Russia, Chita reg., near Naminga vill., 4-VII-2002, leg. V. Ivonin (RYB); 2 males, Russia, Chita reg., Uryupino (ISEAN); 1 male, 1 female, Sibiria or. (Irkutsk), 16/29-V-1910, O. Hesse (ZMHU); 1 male, 1 female, Chita Prov., Argun' river, Uryupino, 26-V-2001, V.V. Dubatolov, S. Gordeev, T. Vlasova (ISEAN); 1 male, 1 female, Chita Prov., left bank of Budyumkan river, 5 – 7 km up from source, a slope with *Quercus mongolica*, 26-V-2001, V.V. Dubatolov, S. Gordeev (ISEAN); 3 males, 1 female, 29-V-2001, V.V. Dubatolov, S. Gordeev (ISEAN); 1 male, 1 – 2 km N from Budyumkan river source, swampy stream valley on a plateau, 31-V-2001, V.V. Dubatolov, S. Gordeev (ISEAN); 6 males, 5 females, Russia, Chita reg., left bank of Gazimur river, near Kundara vill., 25-V-2001 (ISEAN); 1 male, 1 female, SW Yakutia, Dakhabylskaya Steppe, river Delinde (in Chona river), Tkachenko, 8.VII.[19]26 (ZISP); 4 males, Yakutia, Oimyakon distr., Ust'-Nera settl., 16-VI-2010, leg. A. Samus (ASV); 1 male, 180 km ENE Khandyga, Verkhnyaya Khandyga upper course, 232 km of the road Khandyga – Magadan, Kuberlyakh stream valley, 3-VII-1985, V.V. Dubatolov (ISEAN); 1 female, 180 km ENE Khandyga, Verkhnyaya Khandyga upper course, 232 – [23]5 km of the road Khandyga – Magadan, swamp, 28-VI-1985, V.V. Dubatolov (ISEAN); 1 male, Yakutia, 234 km of the road Khandyga-Magadan, Vostochnaya Khandyga river upper course, 24-VI-[19]85, L.Popova (ISEAN); 1 male, Yakutia, 300 km ENE Khandyga, Suntar

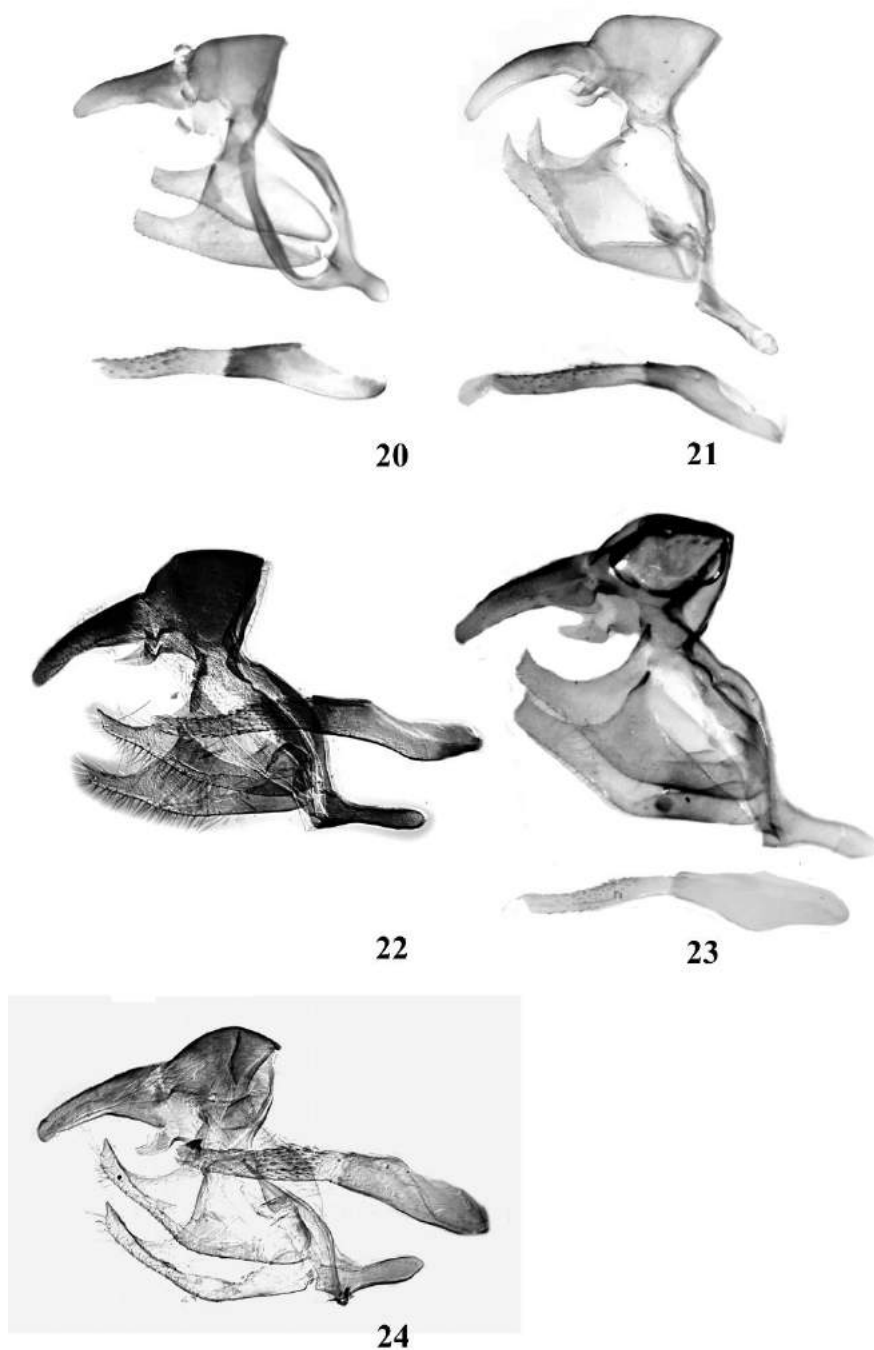


river upper course, Indigirka river basin, 376 km [of the road Khandyga - Magadan], valley, right bank, meadow, 19-VII-1985, V.V. Dubatolov (ISEAN); 1 male, Yakutia, 115 km NE Ust-Nera, Ytabyt-Yuryakh river, 10-30 km upper its source (left tributary of Indigirka river), 5-VII-1987, I.V. Dorofeev (ISEAN); 3 males, 1 female, Yakutia, Khandyga, 12-VI-1985, V.V. Dubatolov (ISEAN); 1 male, 1 female, Yakutia, 232 km road Khandyga-Magadan (ISEAN); 4 males, Yakutia, 270 km ENE Khandyga river, Kyubyume stream, Kyubyume settlement, Indigirka river basin, 336,5 km [of the road Khandyga - Magadan], 18-VII-1985, V.V. Dubatolov (ISEAN); 3 males, 1 female, Yakutia, 364 km road Khandyga-Magadan, Suntar river, 20-VII-[19]85, L. Popova (ISEAN); 1 male, Yakutia, 115 km NE Ust'-Nera, Ytabyt-Yuryakh river (ISEAN); 4 males, N. Yakutia, Ege-Khaja vill., 20-VI-89 (ENH); 1 male, 1 female, Amur (ZMHU); 1 male, 1 female, Amur reg., Blagovestshensk, 17-V-1995, leg. A. Streltsov (RYB); 1 male, Amur reg., Svobodnyi distr., Malaya Sazanka vill., 25-V-1999, leg. A. Streltsov (RYB); 1 male, Sokhondinsky Nature reserve, lower than Verkhny Bukukun, a road in *Larix* forest, 21-VI-1991, V.K. Zinchenko (ISEAN); 2 males, Sokhondinsky Nature reserve, Bukukun river valley, kordon Ernisty, 4-5-VI-1991 (ISEAN); 1 male, upper course of Chita river, 16-VI-[19]39, Cherepanov (ISEAN); 1 male, Amur reg., 80 km N Urusha vill., 18-VI-1999, leg. A. Streltsov (RYB); 2 males, Amur reg., Urusha distr., 7 km NE from Khalan Mt., Khaimkan river (ISEAN); 1 male, Amur reg., 40 km NW Urusha (ISEAN); 1 male, NW Amur reg., Urushinsky Mts., 7 – 8 km NE Khalan Mt., Khaimkan stream valley, 18-VI-1999, V.V. Dubatolov (ISEAN); 6 males, 1 female, same locality, 21-VI-1999, V.V. Dubatolov (ISEAN); 1 female, Amur reg., 40-45 km NW Urusha, Amutkachi village, 18-VI-1999, V.V. Dubatolov (ISEAN); 1 female, Amur reg., Urusha environs, 18-VI-1999, V.V. Dubatolov (ISEAN); 1 female, Zeya Nature Reserve, "Goltzy" kordon environs, tundra, 54°07'N, 126° 56'E, 24-VI-2011 (ISEAN); 1 female, Amur reg., Malaya Sazanka vill., 10-VI-[19]96, A.N. Streltsov (ISEAN); 1 male, Blagovestshensk, environs, 25-V-[19]94, A.N. Streltsov (ISEAN); 1 male, same locality, 21-VI-1996, A.N. Streltsov (ISEAN); 1 female, western environs of Blagovestshensk, Verkhneblagovestshenskoe, agrobiological camp environs, 27-V-1999, V.V. Dubatolov (ISEAN); 1 male, 1 female, Amur reg., Kuvykta station, 19-VI-1996, A. Streltsov (ISEAN); 2 males, Amur (MHUB); 1 male, Schilka (MHUB); 1 male, 2 females, Pokrofka (MHUB); 10 males, Khabarovsk reg., Dusse-Alin' Mts., Pravaya Bureya riv. valley, kordon "Medvezh'e", 16-VI-2012, E. Novomodnyi leg. (ENH); 1 male, Khabarovsk Prov., Pivan' environs, 21-VI-[19]77, V.A. Mutin (ISEAN); 2 males, 1 female, Khabarovsk Prov., Khekhzyr, 10-VI-1980, [Chulkov] (ISEAN); 1 female, Khabarovsk reg., Chegdomyn vill., park, 5-VI-2003, E. Novomodnyi leg. (ENH); 8 males, 4 females, Khabarovsk reg., Bol'shoj Khekhzir Mts., Chirki, 22-VI-1987, E. Novomodnyi leg. (ENH); 2 males, Khabarovsk reg., Berezovyi vill., BAM, 25-27-VI-1973, leg. Dolgikh (ENH); 2 males, Khabarovsk reg., Evoron lake, 16-19-VI-1973, leg. Dolgikh (ENH); 2 males, Khabarovsk reg., Sidima vill., 13-VI-1981 (ENH); 1 male, 1 female, Middle Sikhote-Alin' Mts., Zolotoi vill., Nemiz riv., 12-VI-1981

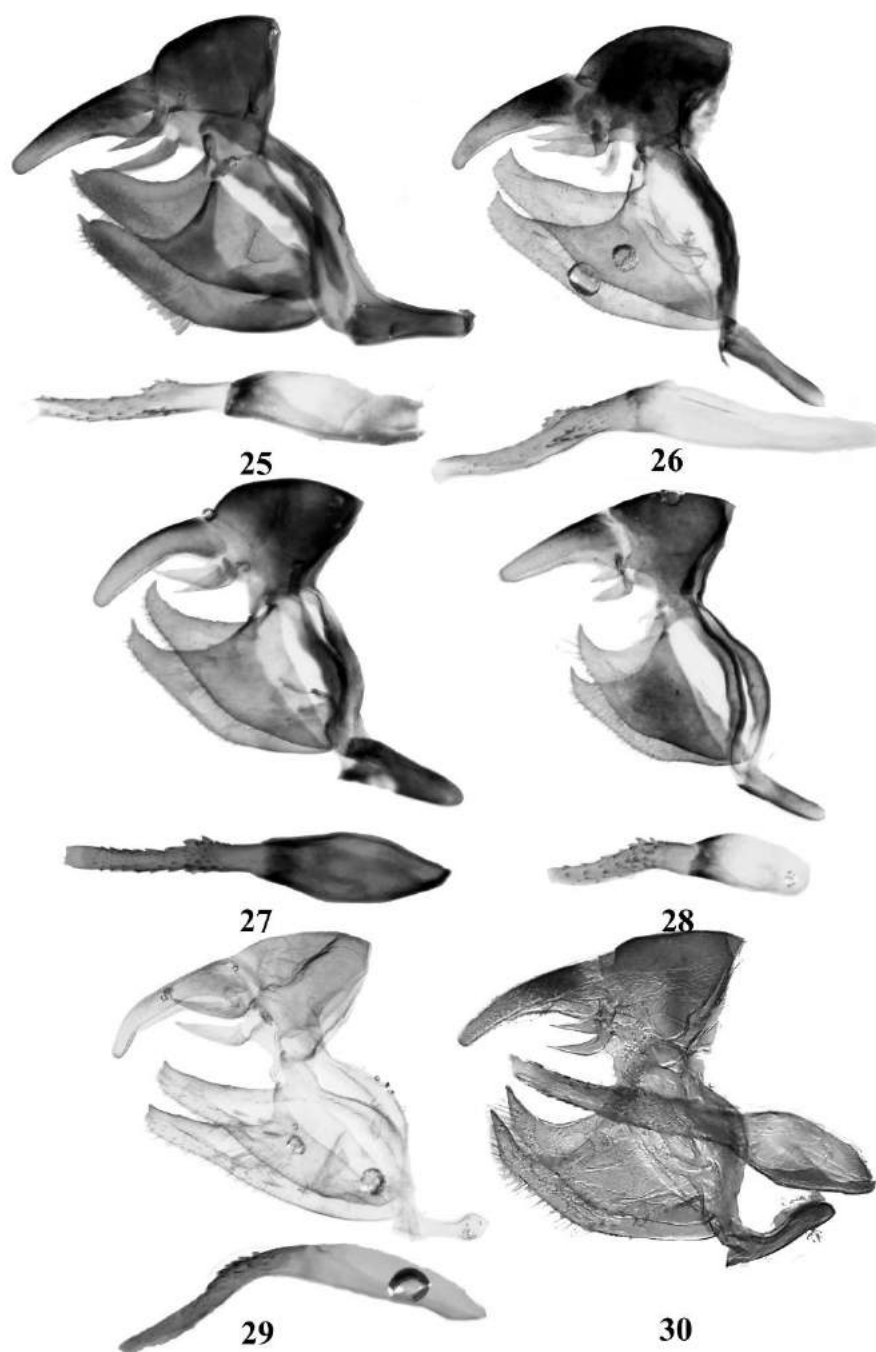


(ENH); 2 males, 1 female, Malyi Khingan Mts., Kuldur, 1965, leg. Chulkov (ENH); 1 male, 2 females, Amur, Zimmermanovka vill., 25-VI-1987, E. Novomodnyi leg. (ENH); 1 female, Primorye reg., Chuguevka, 10-V-1993, leg. Yu. Gluschenko (RYB); 1 male, Magadan reg., Omolon Sovkhoz, Kegali river, 3-VII-[19]68, Gomoyunova (ISEAN); 1 male, Magadan Prov., 23-VIII-[19]68, Levina (ISEAN); 2 males, Magadan Prov., Kegali, 30-VI-[19]69, V. Nikolaev (ISEAN); 1 male, Magadan Prov., Palatka settlement env., 5-VII-1997, V.V. Papekha (ISEAN); 2 males, Magadan reg., Aborigen station, Mai-Urusta, 26-VI-1997 (RYB); 2 males, 1 female, Magadan reg., Omsukchan distr., Kupka, 119 km road to Omsukchan, 700 m, 61°59'43"N, 153°56'07"E, 28-VI-2006, leg. Cernila (MCK); 1 male, 1 female, Chukotka, 10 km from Markovo, Anadyr' valley, 28-VI-[19]67, Mirzaeva (ISEAN); 1 female, 14.VII.1894, Mongolia Terilgje Kaschkaroff, coll. G.D. Nikolai Mikhailovich (ZISP); 1 female, Nertschinsk, 25.VI (ZISP); 1 female, Nertschinsk, Fabri coll., 31.VI.[1]907; 1 male, 1.VIII.[1]907; 1 female, 2.VIII.[1]907; 1 male, 15.VII.[1]908; 1 female, 31.VII [1]908 (ZISP); 1 female, Nertschinsk, Sukhoi Log, 5.VI.1906; 1 female, 21.VI.1907; 1 female, 1.VII.[1]909; 1 female, 10.VI.[1]910; 1 male, 14.VI.[1]910; 1 male, 21.VI.[1]910; 2 males, 24.VI [1]910, Fabri coll.; 1 male, 14.VI.[1]910 (ZISP); 1 male, Sretensk, Zabaik., 10.VI.1930, Kapustin (ZISP); 2 males, 4 females, Pochrofka, coll. Dieckmann, Graeser legit. (ZISP); 1 male, Albasin, Puzilo, VII/VIII coll. Ersch.[off] (ZISP); 2 males, Bol'shoi Never Amursk. Prov., Zakharzhevsky, 15.VI.[1]927 (ZISP); 3 males, 1 female, Tukuringra-Gebge. Amur-Geb. Koshantschikow 22.V.[1]914 (ZISP); 5 males, Seja Amur-Geb. Koshantschikow 20.V.1914; 2 males, 1 female, 22.V.[1]914; 1 male, 1 female, 23.V.1914 (ZISP); 1 male, Amur, st. Kozakevicheva [Kazakevichevo, Ussuri valley], 1897, Bykov (ZISP); 3 males, Koslofska [Kozlovka, near Bikin, Ussuri valley], Bykow (ZISP); 1 male, Indigirka Valley, near Zashiversk, 30.VI-[19]20, Indig.[irka] Exp.[edition] Ak.[ademy] S.[cience] (ZISP); 1 female, Sr.Kol.[Srednekolymsk], 29.VI.[1]905 (ZISP); 1 male, 1 female, W. Chukotka, Bilibino, 5.VII.[19]90, V. Sinyaev (ZISP).

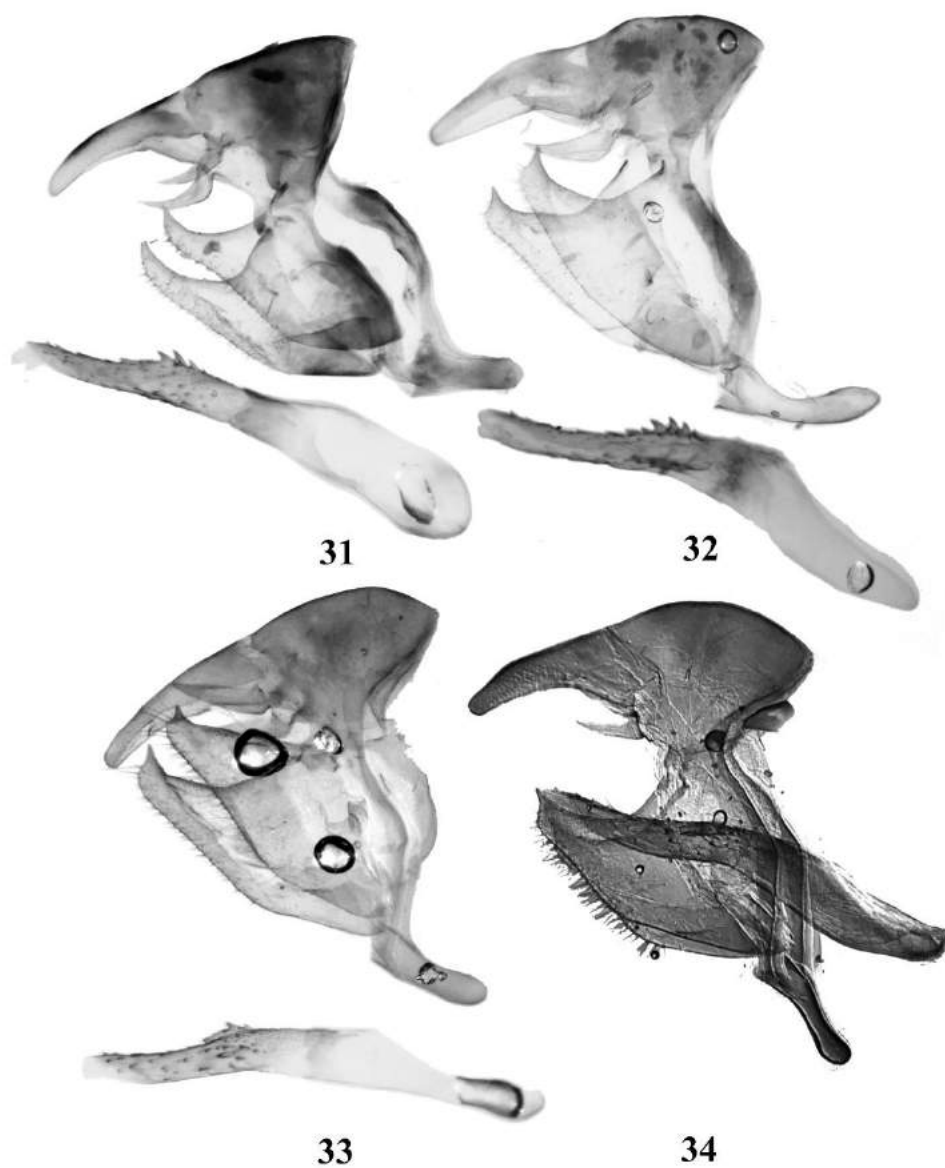
Distribution. Russia: Chita reg. (Sokhondo Mts., Udokan Range, Argun river lower course) (Dubatolov & Gordeev, 2002), Amur Prov., Khabarovsk Prov. (Kurentsov, 1970; Mutin, 1992; Koshkin et al., 2007), Ussuri Prov. (Martynenko, 2000), Western, Southern and North-Eastern Yakutia (Herz, 1903a, 1903b; Kajmuk et al., 2005), Magadan reg. (Takahashi & Oshima, 2005), W. Chukotka (Markovo, Bilibino); North Korea; and in NE China (Nikitin, 1945; Tuzov, 1995). The isolated population of *Triphysa nervosa* recorded by P.Y. Gorbunov (1992) from the Malaya Sos'va nature reserve (NW Siberia, Khanty-Mansi Autonome District, Russia) and from the environs of Tazhnyi village (on the border between Khanty-Mansi Autonome District and Sverdlovsk reg., Russia). Another isolated population is known from the Sokhondo mountains in south-western part of Chita Prov.; this population is surrounded by other subspecies occurring in mountain hollows.



Figures 20–24. Male genitalia (lateral projection) of *Triphysa*: 20 – *T. phryne*, Volgograd reg.; 21 – *T. phryne kasikoporana*, holotype; 22 – *T. striatula*, cotype; 23 – *T. striatula urumtshiensis*, holotype; 24 – *T. issykkulica*, holotype.



Figures 25–30. Male genitalia (lateral projection) of *Triphysa*: 25 – *T. nervosa glacialis*, Altai, Ukok, Mai-Pak, h–2300 m; 26 – *T. nervosa tuvinica*, paratype; 27 – *T. nervosa arturi*, paratype; 28 – *T. nervosa kobdoensis*, paratype; 29 – *T. nervosa mongolaltaica*, holotype; 30 – *T. nervosa biocellata*, lectotype.



Figures 31–34. Male genitalia (lateral projection) of *Triphysa*: 31 – *T. nervosa brinikhi*, holotype; 32 – *T. nervosa nervosa*, Amur reg., Blagoveshensk; 33 – *T. nervosa tscherskii*, Yakutsk; 34 – *T. nervosa nervosa*, Magadan reg.

*Triphysa nervosa glacialis* A. Bang-Haas, 1912

Figs. 2m–x, 6a, 10–11, 25.

Triphysa dohrnii glacialis A. Bang-Haas, 1912, Deutsch. Entomol. Zeit., Iris **26**: 105. Type locality: "Arasagun-Gol" [Arsan-Gol river, west environs of Khubsugul lake, Khubsugul Aymak, Mongolia].

Type material (lectotype, **designated here**) in MHUB. Lectotype male, labelled: handwritten (black ink) on white paper "*Triphysa* | *Phryne* | (*Dohrni*) | v. *Glacialis* | B.H"; printed on pink paper "Origin."; printed on white paper "Arasagun-gol | Sajan"; printed on red paper: "Lectotypus ♂ | *Triphysa dohrnii* | *glacialis* Bang-Haas 1912 | Dtsch. Ent. Z. Iris 26: 105 | Dubatolov, Korb, Yakovlev des. 2013". Paralectotypes: 2 males, 4 females, same labels.

Diagnosis. In comparison to the nomenotypical subspecies the forewing upperside with cubital spots of the postdiscal series without white centers (as well as on hindwing), significantly larger than other postdiscal spots; the whole pattern is much mottled, veins on the forewing underside are contrasting. White edging of wings is very narrow. Fringes are brown.

Material examined. 1 male, 1 female, Altai (ZISP); 1 female, Altai Max Bartel (ZISP); 1 male, 1 female, S.E. Altai Tchuja Mts. 6-8000 ft. 5.7.[18]98 H.J. Elwes (ZISP); 1 male, SE Altai, Tschuya Valley, 4-6800 ft., 21-VI-1898, H. Elwes (LNK); 2 males, S.E. Altai, Tshuya Valley, 4-6000f, 21-VI-[18]98, H.J. Elwes (MHUB); 2 males, 2 females, Altai, Aktash, 7-12-VI-1992, S. Dialektov (SCR); 1 male, Altai, Ulagansky distr., Yoldu river, 11-VI-2005, V.K. Zinchenko (ISEA); 4 males, 4 females, S. Altai, Chagan-Uzun vill., 2300 m, 8-VII-1966, leg. A. Shtandel (ZMMU); 5 males, 5 females, Altai, Kurai, 1800 m, 5-7-VI-1998, Aniskovitch leg. (SCR); 5 males, 5 females, C. Altai, N. Chuya Mts., Maashei river., 1-4-VI-2001, I. Shiyanov leg. (RYB); 1 male, N Ukok plateau, Tarkhata river valley, 2400 m, 27-VII-2013, S. Nikolaev (ISEA); 1 male, 1 female, Ukok plateau, Zhumaly river upper course, 4-VII-2005, V.K. Zinchenko (ISEAN); 3 males, 1 female, Ukok plateau, Muzdy-Bulak lake environs, 26-VI-1-VII-2005, V.K. Zinchenko (ISEAN); 10 males, 10 females, SE Altai, Ukok plateau, Mai-pak, H – 2300 m, 29-VI-3-VII-1997, R. Yakovlev (RYB); 1 male, 1 female, SE Altai, Ukok plateau, Mai-Tobe Mt., H – 2800 m, 7-VII-1997, R. Yakovlev (RYB); 1 male, 1 female, SE Altai, Ukok plateau, Mai-Tobe Mt., H – 2800 m, 7-VII-1997, R. Yakovlev (RYB); 1 male, 1 female, SE Altai, Ukok plateau, Bertek, H – 2200 m, 8-VII-1996, R. Yakovlev (RYB); 1 male, 1 female, SE Altai, Kosh-Agatch, H – 1900 m, 23-VI-1993, E. Noskov (RYB); 1 male, 1 female, SE Altai, Kosh-Agatch distr., Dzhazaror (Belyashi), 21-VI-1995, H – 1800 m, R. Yakovlev (RYB); 1 male, Kosh-Agach distr., Zermokol-Nur lake, 2320 m, N49-56', E88-21', 22-VI-2005, V.K. Zinchenko (ISEAN); 1 male, Kosh-Agach Distr., upper Dzhazator River basin, Yuzhno-Chuiiskii Mt. Range, S slope, alternating dwarf, birch/Kobresia tundras between the Akbul and Chikty Rivers, 2300-2500m



alt. 15-VII-1998, O. Kosterin (ISEAN); 1 male, 1 female, Altai, Kurai Mts., Cheibek-kol' lake, 20-25-V-1998, R. Yakovlev (RYB); 3 males, 7 females, Kurai, Argatut valley, 6-20-VI-[19]60, Zheltikova (ISEAN); 1 female, Kurai, Tyurgun' valley, 20-VI-[19]60, Zheltikova (ISEAN); 1 male, Sukor, near Chagan-Uzun, 2600 m, 7-VII-[19]66, A. Shtandel (ISEAN); 1 male, 1 female, SE Altai, 15 km E Kokorya, Tapduair Mts., 25-VI-2000, R. Yakovlev (RYB); 2 males, Altai, Kurai, Tyurgun' (ISEAN); 2 males, Altai, Kurai, Argatut (ISEAN); 1 male, near Chagan-Uzun (ISEAN); 1 male, Altai, Krenrek, 29-VI-19..., leg. E. Rodd (ISEAN); 1 male, Altai, North bank of Dzhulukul' lake (ISEAN); 1 male, Altai Nature Reserve, northern slope of Dzhulukul lake, 2250 m, 2-VII-1986, N. Zolotukhin (ISEAN); 1 female, Kultuk, Baicalsee (LNK); 1 male, Baikal lake, Southern border of Baikalo-Lenskii Reserve (ISEAN); 1 male, Arasagun gol, Sajon (LNK); 7 males, 1 female Arasagun gol, Sayan (Co-types) (ZFMK); 2 males, 2 females, Arasagun-gol Sajon (ZISP); 3 males, 1 female, Sayany, Arasan-Gol, coll. Avinoff (ZISP); 1 female, Kosogol [Khubsugul] lake, V. Dorogostajsky, 27.VI. (ZISP); 1 male, 2 females, Sajon. mont (ZISP); 1 male, 4 females, Gouv. Irkutsk, Sayan, orient Tunkinsk Weissberge, 2000 m, Juli (ZFMK); 5 males, Munko Sardyk, Sayan Mts., Mondy-Irkutsk, 1800 m, August (ZFMK); 1 male, Siberia or., Irkutsk, 25-V-1910, O. Hesse (MHUB); 2 males, 2 females, E. Sayan, Mt. Khulugaisha, 25-VI-1979 (ZSSM); 1 male, 1 female, Ost-Sajon (MHUB); 1 male, 3 females, Sibiria or. (MHUB); 1 male, Munko Sardyk, Sayan Mts., Mondy-Irkutsk, 1800 m, August (MWM); 2 males, 1 female, Buryatiya, Mondy, 2-VII-1947, A. Tzvetaev (ZMMU); 2 males, 2 females, Buryatiya, Mondy, 2000 m, 1-VI-2001 (SCR); 1 male, 1 female, W. Buryatiya, Mondy, 21-VI-2002 (RYB); 2 males, 2 females, Buryatiya, Khamar-Daban, Tazhnyi, 10-VI-1988, Makhat leg. (SCR); 2 males, 1 female, Buryatia, Kurumkan distr., Dzherga Reserve, near Dzherga, 27-V-1996, leg. S. Rudykh (SRU); 1 male, Buryatia, Mondy, 14-VI-1986, Y. Timoshenko (ISEAN); 1 male, Khakassiya, Shira lake, 15-VI-1931, P. Valdaev (MGU, Tzvetaev coll.); 2 males, 2 females, Minusinsk, Tagarskii Ostrov, 29-V-[19]33, Kozhantchikov (ZSSM); 4 females, Shawyr, Tannu-Ola, Juni, 2500 m (ZFMK); 1 male, Tuva, 6 km S Targalyk, 9-V-1990, V.K. Zinchenko (ISEAN); 4 males, Tuva, Khovu-Aksy, Elegest river, 5-6-V-1990, V.K. Zinchenko (ISEAN); 1 female, Tuva, Balagazinsky forest, 8-VI-[19]48 (ISEAN); 2 males, Tuva, Khondergei, 22-6-[19]63, Violovich (ISEAN); 2 males, 2 females, Shawyr, Tannu-Ola, Juni, 2500 m (ZSSM); 1 male, 1 female, Tuva, Ust-Khemsy distr., 25 km SSE Shagonar, Chelety river, 8-V-1990, V.K. Zinchenko (ISEAN); 1 female, Tuva, 15 km S Shagonar, Chiletty, 10-V-1990, V.K. Zinchenko (ISEAN); 1 male, 2 males, 2 females, Tuva, Kyzyl vic., right bank of Yenisey river, 20-V-1989, V.K. Zinchenko (ISEAN); 2 males, Tuva, Kyzyl, mountains near upper course of Ulug-Khem river, 17-18-V-1990, V.V. Dubatolov, V.K. Zinchenko (ISEAN); 1 male, 1 female, Tuva, Piy-Khema distr., Ust-Uyuk, 21-V-1989, V.K. Zinchenko (ISEAN); 3 males, 3 females, W. Sayan, near Krasnoyarsk, Kacha river Valley, 15-V-2002 (RYB); 1 female, Krasnoyarsk reg., near Solonzy vill., 12-VI-1977 (ISEAN); 1 male, Krasnoyarsk reg., near Torgashino



(ISEAN); 1 male, Sayano-Shushenskii Reserve, river Uzun-Sug, 25-V-1989, leg. V. Vagin (ISEAN); 1 male, 1 female, Sayano-Shushenskii Reserve, river Khem-Terek, 2-VI-1989, leg. V. Vagin (ISEAN); 1 male, Irkutsk Prov., southern border of Baikalo-Lensky Reservation, Onkholoi camp, 29-VII-2003, O. Berlov; 1 female, Krasnoyarsk, Enisej Valley, A. Jacobson, 29.V.[8]97 (ZISP); 3 males, 2 females, Torgashino, near Krasnoyarsk, A. Jacobson, 27.V.[18]97 (ZISP); 1 male, 2 females, Krasnoyarsk [Krasnoyarsk], right bank, 29.V. (ZISP); 1 male, 1 female, Minusinsk, Tagarsky Island, 21.V.[19]24; 4 males, 1 female, 24.V.[19]24; 1 male, 6 females, 27.V.[19]24, Filipiev; 1 female, 19.V [19]24 (ZISP); 1 male, Minusinsk, Tagarsky Island, 24.V.1930; 1 male, 28.V.1930; 1 male, 29.V.1930; 3 males, 30.V.1930; 3 males, 28.V.1931; 1 male, 2.VI.1931; 1 female, 22.V.1932, Kozhantschikoff; 3 males, 1 female, 23.V.1932; 2 males, 26.V.1932; 1 male, 28.V.1934 (ZISP); 1 female, Togarsk. Isl., 9.VI.1919 (ZISP); 1 male, 1 female, near Minusinsk, 18.V.1916, Kozhantschikoff; 1 male, 1 female, 19.V. (ZISP); 1 female, Mishikha (Abakan Basin), Minus, A. Jacobson, 27.VI.[18]97 (ZISP); 1 male, 3 females, Munko Sardyk Sajan mont (ZISP); 1 male, Nukhu-Daban, 6.V.1914 S. Rodionoff; 1 male, 26.V.1913 (ZISP); 3 males, Shulun-Khurde, 29.V.1914, S. Rodionoff (ZISP); 1 male, Irkutsk, coll. Avinoff (ZISP); 1 female, Irkutsk (ZISP); 3 males, 3 females, Irkutsk, 16 Mai [18]66, coll. Erschoff (ZISP); 1 male, Irkut Leder кбвкHM (ZISP); 1 male, Irkut кбвкHM (ZISP); 1 male Irkutsk 4.VI.[19]09 A.I. Kiriloff (ZISP); 1 male, Irkutsk, 15.V [19]07, Stschegolkova (ZISP); 1 female, Irkutsk, 19/V [19]09, Stschegolkova (ZISP); 2 female, Irkutsk (ZISP); 1 female, Siberia Irkutsk coll.Meinhardt, 4101 (ZISP); 1 male, 6 females, Verkhol.[enskaya] Mt. [near Irkutsk], 2/V [1]914; 16 males, 3/V [1]914, S. Rodionoff; 13 males, 2 females, 6.V (ZISP); 1 male, 5 females, Glazun. Pad', 9.V.[1]914 S. Rodionoff; 1 female, 7.V.1913; 1 male, 1 female, 27.V 1913 (ZISP); 1 male, Gorkhon, 31.V 1914 S. Rodionoff (ZISP); 1 male, Ushakovka, 12.V 1915, S. Rodionoff (ZISP); 2 males, 4 females, Kachug river near Irkutsk, 15.V-15.VI Lukashik, Chiglinzev (ZISP); 2 males, Irkutsk gub. [Province] (ZISP); 1 female, Petrovskij Zavod, Transbaikalia, 3-VI-[1]911, coll. Stschuko (ZISP).

Distribution. Russia: Russian Altai (Central and South-Eastern parts), Sayan Mountains (Krasnoyarsk reg., Khakasiya, Buryatiya near Mondy), Tuva (West and East Tannu-Ola Mts.), Khamar-Daban Mts., Irkutsk reg. (southern part), including western bank of Lake Baikal, Mongolia (Khubsugul distr.). Detailed distribution data in Altai and Sayan mountain regions listed by R.V. Yakovlev, A.N. Nakonechny (2001), R.V. Yakovlev (2004), V.V. Tshikolovets et al. (2009), in Buryatia – by A.A. Shodotova et al. (2007).

***Triphysa nervosa tuvinica* Dubatolov, Korb et Yakovlev, ssp. n.**

Figs. 3a–h, 6a, 12, 26.

Description. *Male.* Forewing length 19–20 mm, wings are dark with light and bright wide border and fringes. On the hindwing upperside, the discal cell is highlighted on veins by thin light stripes. Forewing underside with cubital spots much larger than other postdiscal spots (very different size). Hindwing upperside has well pronounced spots of almost equal size. The light pattern on wings' upperside is well developed. *Female.* Forewing length 20 mm, wings' upperside light yellow, light pattern on the wings' underside well developed, wings with "colourful" appearance.

Diagnosis. This subspecies is much larger than ssp. *glacialis* O.B.-H. and other related subspecies. White edging on the wings' upperside is rather wide. Discal cell on hindwing highlighted by thin light stripes. Apical bordering of the central cell in the wings often delineated by bright color. Cubital eyespots on the forewing underside are much larger than the others, all postdiscal spots are without white centers. Light bordering of veins is very clear. Upperside pattern is very mottled.

Material examined. Holotype. Male, N. Tuva, near Kyzyl, Tuge Mt., 1-VI-2010, R. & A. Yakovlev (ISEA). Paratypes. 6 males, 5 females, Tuva, Kyzyl, B. Enisei river, Byi-Khem, 11-18-V-1998, leg. Vashenko (SCR); 3 males, N. Tuva, near Kyzyl, 9-V-2002, V. Ivonin (RYB); 28 males, 11 females, N. Tuva, near Kyzyl, Tuge Mt., 1-VI-2010, R. & A. Yakovlev (RYB); 14 males, 10 females, N. Tuva, near Shagonar, Khajyrakan Mt., 5-VI-2010, R. & A. Yakovlev (RYB); 3 males, 1 female, near Kyzyl, right bank of Enisei river, 20-V-1989, leg. V. Zinchenko (ISEAN); 2 males, near Kyzyl, mountain at Ulug-Khem river, 17-V-1990, leg. V. Dubatolov & V. Zinchenko (ISEAN); 1 male, 1 female, Tuva, Bii-Khem distr., Ust'-Uyuk, 21-V-1989, leg. V. Zinchenko (ISEAN); 1 male, 1 female, Tuva, Ust'-Khem distr., 25 km SE Shagonar, Chaaty riv., 8-V-1990, leg. V. Zinchenko (ISEAN); 1 female, Tuva, Ust'-Khem distr., 15 km S Shagonar, Chilakty, 10-V-1990, leg. V. Zinchenko (ISEAN); 2 males, Khovu-Aksy, Elegest river, 5-VI-1990, leg. V. Zinchenko (ISEAN); 1 male, Tuva, 6 km S Targalyk, 9-V-1990, leg. V. Zinchenko (ISEAN).

Distribution. Northern and Central Tuva (steppes and semi deserts).

***Triphysa nervosa arturi* Dubatolov, Korb & Yakovlev, ssp. n.**

Figs. 3i–p, 6a, 13, 27.

Description. *Male.* Forewing length 15–16 mm. Wings dark with white fringes and wide light border along the marginal and costal (fore wing) borders. Central cell with white veins. Underside with greatly reduced postdiscal spots. *Female.* Forewing length 15–16 mm. Upperside white. Underside with strongly reduced eyespots. Forewing underside in its angle with expressed lighting.



Diagnosis. This new subspecies (as far as *kobdoensis*) is an intermediate taxon between the groups *glacialis* and *biocellata*. Specimen are very small, males with wide white bordering on the wing upperside (the bordering often extends to the costal area), in the central cell white veins are visible (as in the previous subspecies, which is larger and with larger postdiscal eyespots). Postdiscal eyespots on the underside are reduced, but the quite large cubital spots on the forewings can remain; they are always without white centers. Underside always with contrasting bright veins. Female has brightening on the forewing underside in the anal angle.

Etymology. New subspecies named after Artur Yakovlev, son of the third author, who helped to collect a part of the type series.

Material examined. Holotype. Male, S. Tuva, 15 km WSW Erzin, 24-V-1990, V. Dubatolov (ISEA). Paratypes. 1 male, 5 females, S. Tuva, 15 km WSW Erzin, 24-V-1990, V. Dubatolov (ISEA); 3 males, near Erzin, 20-V-2001. V. Ivonin (RYB); 13 males, 9 females, near Erzin, 4-VI-2010, R. & A. Yakovlev (RYB); 2 females, S. Tuva, Erzin distr., Mt. Onchalaan, 28-VI-1989, leg. V. Zinchenko (ISEAN); 1 female, same locality, 24-V-1990 (ISEAN); 1 male, 1 female, S. Tuva, 15 km W Erzin, 1-VI-1989, leg. V. Zinchenko (ISEAN); 2 males, 4 females, S. Tuva, Erzin distr., near Mts. Onchalaan and Sook-Toj, 24-VI-1990, leg. V. Zinchenko (ISEAN).

Distribution: Russia, S. Tuva (Ubsunur Valley).

Triphysa nervosa kobdoensis Dubatolov, Korb & Yakovlev, ssp. n.

Figs. 3q–v, 6a, 14, 28.

Description. *Male*. Forewing length 16–17 mm. Forewing with relatively sharp apex. Upperside brown with light yellow border (width about 1 mm). Wing upperside strongly lightened (on forewing in costal margin and basal area, on hindwing whole surface). Underside light with bright colorful elegant pattern. Cubital eyespots on forewing are slightly enlarged. Veins on hindwing underside are silver. *Female*. Fore wing length 16.5 mm. Upper side bright, without pattern; underside pattern is thin and elegant. Eyespots on underside are centered by white color in 3 out of 5 available specimens.

Diagnosis. This new subspecies in comparison with other subspecies has more narrow forewings in males, very light-colored wings on the upperside and very thin beautiful pattern on the underside.

Etymology. The name is toponimic.

Material examined. Holotype, male, W. Mongolia, Hovd aimak, 15 km S Khara-Uus-Nuur lake, 1300 m, 12-III-2004, leg. R. Yakovlev & D. Ryzhkov (ZISP). Paratypes: 2 males, same data (RYB), 1 male, 1 female, W. Mongolia, Hovd aimak, 50 km W Hovd, 1485 m, 4-VII-2004, leg. R. Yakovlev & D. Ryzhkov (RYB); 1 female, Ms.Alt.[ai] coll. Erschoff (ZISP).

Distribution. Western Mongolia (Great Lakes Valley). Area of this subspecies limited very well by deserts that surround the Great Lakes.

Triphysa nervosa mongolaltaica Dubatolov, Korb et Yakovlev, ssp. n.

Figs. 4a–h, 6a, 15, 29.

Description. *Male.* Forewing length 17–19 mm. Wings brown with relatively wide pale edge. Costal edge and distal parts of cubital veins on forewing are light. Veins on wings' underside are light, eyespots with no white centers, small. *Female.* Forewing length 17–18 mm. Upperside light, without pattern. Underside pattern is strongly diffused. Eyespots with no white centers.

Diagnosis. This subspecies is closely related to *T. nervosa glacialis*, but it differs from it by its larger size; by white-accented distal parts of cubital vein on forewing upperside; by highly diffused pattern on female wings' underside.

Etymology. The name is toponimic.

Material examined. Holotype, male, Mongolia, Hovd aimak, Bulgan-Gol basin, middle stream of Ulyasutai-Gol river, 2500–3000 m, 25–26-VI-2004, leg. R. Yakovlev & D. Ryzhkov (ZISP). Paratypes: 12 males, 3 females, same locality (RYB); 14 males, 6 females, SW Mongolia, Gobi-Altai aimak, Mongolian Altai Mts., Khasgt-Khairkhan Mts., 17 km SSW Zhargalan, 19–21-VII-2010, 2500–2900 m, 46°48'N, 95°49'E, leg. R. Yakovlev & E. Guskova (RYB); 4 males, W. Mongolia, Hovd aimak, Bulgan-gol basin, Bayan-Gol river valley, Arshantyn-Nuruu Mts., Ulyastajn-Sala river, 1900 m, 46°21'N, 91°08'E, 9.-10-VI-2011, R. Yakovlev leg. (RYB).

Distribution. Mongolia (Mongolian Altai Mts.). Area of this subspecies on all sides by vast desert territories is restricted: Nuurdun from east and north and Gashun Gobi, Dzhungarian Gobi and Alashan deserts from west and south.

Triphysa nervosa biocellata Staudinger, 1901

Figs. 4i–t, 6a, 16, 30

Triphysa phryne biocellata Staudinger, 1901, in: Staudinger, Rebel, 1901; Cat. Lep. Pal. Faunengeb. 1: 67. Type locality: "Amdo" (stated erroneously). By lectotype designation (designated here) the type locality is: "Tetang mont." [Qinghai, China]. "... a praec. var. [*Dohrnii*] differt al. ant. supra ocellis duobus magnis caecis (nigr.) plerumque etiam in ♂ perspicuis; al. post. subt. ocell. minoribus."

Lectotype male, **designated here**, labelled: handwritten (black ink) on brown paper "Tibet | Tetang mont¹ | 90 Gr.Gr."; brown circle; handwritten (black ink) on white paper "*Triph.* | *Dohrnii* | Tetung-mont"; printed on pink paper "Origin."; printed on red paper "Lectotype ♂ | *Triphysa phryne* | *biocellata* Staudinger, 1901 | Cat. Lep. Pal. Faunengeb.: 67 | Dubatolov, Korb, Yakovlev des. 2013".



= ssp. *kintschouensis* O. Bang-Haas, 1939 (*Triphyra* (sic!) *phryne kintschouensis* O. Bang-Haas, 1939, Dt. Ent. Z. Iris, B. 53: 53).

Lectotype male, **designated here**, labelled: printed on white paper "Mandschuris mer. occ | Prov. Fengtien | Kintschou | 100 m Juli"; printed on white paper "162."; printed on pink paper "Co-Type | O.Bang-Haas"; handwritten (by pencil) on white paper "*phryne* | *kintschouensis*"; printed on red paper "Lectotype ♂ | *Triphyra phryne* | *kintschouensis* O.Bang-Haas, 1939 | Dt. Ent. Z. Iris, B. 53: 53 | Dubatolov, Korb, Yakovlev des. 2013".

Diagnosis. Upperside with well developed light border. Underside with highly enlarged cubital eyespots of postdiscal row with small white centers. Female has large cubital spots often visible on the wings' upperside. Veins on the underside are bright, the whole pattern is mottled. Pictures of genitalia published by G.C. Bozano (2002).

Material examined. 1 male (lectotype of *biocellata*); 1 male (lectotype of *kintschouensis*), 1 female (paralectotype of *kintschouensis*) (MHUB); 1 male, 1 female, Mandschuria mer. occ., Prov. Fengtien, Kintschou, 100 m, Juli (paralectotypes of *kintschoensis*); 2 males, 1 female (paralectotypes of *biocellata*) (MHUB); 1 male, 1 female, Tibet (Kuku-Noor) (ZMHU) (paralectotypes of *biocellata*) (ZMHU); 1 female, Thibet, Tetung mont., [18]90, Gr.-Gr. (MHUB) (cotype); 1 female, Kuku-Nor 94 Rkbl. (MHUB); 2 males, 1 female, Kuku-noor (LNK); 1 female, Kuku-noor (ZFMK); 6 males, 6 females, Kuku-noor, Tancre (ZSSM); 2 males, 2 females, Mandschuria merid., Prov. Fengtien, Kintschou, 100 m (paralectotypes of *kintschouensis*) (ZSSM); 1 male, 2 females, China, Prov. Chinghai, Sinig-Huangyuan, 30-V-1951, F. Eichinger (ZSSM); 5 males, 5 females, Russia, Buryatia Rep., Gusinoe Ozero vill., steppe rivulet valley, 25-V-2002, leg. Shevnin (RYB); 4 males, 4 females, Mongolia, Darhan, 17-27-V-1987, leg. S. Andreev (RYB); 1 male, Buratia, Ulan-Ude distr., Kokorino, Gilbira river, 2-VI-[19]73 (ISEAN); 5 males, 5 females, Daurian Nature Reserve, NE coast of Zun-Torei lake, Kuku-Khadan Mt., southern slope, 8-VI-1995, V.V. Dubatolov (ISEAN); 1 male, same locality, 10-VI-1995, V.V. Dubatolov (ISEAN); 1 female, same locality, 11-VI-1995, V.V. Dubatolov, R. Dudko (ISEAN); 1 male, same locality, 14-VI-1995, V.V. Dubatolov (ISEAN); 1 female, same locality, 7-VI-1995, V.V. Dubatolov, R. Dudko and I. Lyubechansky (ISEAN); 1 female, same locality, 12-VI-1995, V.V. Dubatolov, R. Dudko (ISEAN); 2 males, 2 females, Daurian Nature Reserve, NE shore of Zun-Torei lake, steppe from Batukha to Gydyrgun, 9-VI-1995, V.V. Dubatolov (ISEAN); 1 female, Daurian Nature Reserve, NE shore of Zun-Torei lake, steppe between Kuku-Khadan and Gydyrgun, 9-VI-1995, V.V. Dubatolov, R. Dudko (ISEAN); 1 male, 1 female, Daurian Nature Reserve, NE shore of Zun-Torei lake, near Gadyrgun Mt., valley with no trees, 11-VI-1995, V.V. Dubatolov (ISEAN); 2 males, 1 female, Daurian Nature Reserve, NE shore of Zun-Torei lake, Khadanyata valley, steppe, 11-VI-1995, V.V. Dubatolov (ISEAN); 1 male, 1 female, 7 km W Barun-

Torei lake, southern environs of Nizhny Mukey lake near Mongolian border, steppe, 15-VI-1995, V.V. Dubatolov (ISEAN); 1 male, Kiachta кѡвкѢМ (ZISP); 1 female, cAP (ZISP); 1 male, Kiachta, coll. Erschoff (ZISP); 1 male, 1 female, Troizkosavsk, Mikhno, VII.[19]03 (ZISP); 1 female, Ust'-Kiran on Chikoj river, east Kiachta, Khomze, 3.VI.[19]03 (ZISP); 18 males, 1 female, Urga Leder (ZISP); 6 males, 8 females, Sichuan, Sunnan [Songnan], 9500', Berezovsk.[y], 15-25.V.[18]94 (ZISP); 1 male, 1 female, Detung [Datung He] Gr.-Gr. кѡвкѢМ (ZISP); 1 male, S. Tetung Mts. (ZISP); 1 female, Kuku Nor coll. Avinoff (ZISP); 1 female, [Nei Mongol,] Inn Shan Chingan mont. Mongolei or. 2000m Juni(ZISP).

Distribution. China (Sichuan (partly), Qinghai, Gansu, Nei Mongol, mountains of Western Liaonin); East Mongolia (Darkhan etc.), Russia (South Buratia (Selengan Dauria), southern part of Chita Prov.). Actually this subspecies is widely distributed: it covers all Eastern and Inner Mongolia (westwards from Darkhan) to Torei Lake Depression in the Daursky Nature reserve, as well as in Chinese provinces from Sinuan and Qinghai to Liaonin. Butterflies prefer dry steppes and perhaps semideserts.

Triphysa nervosa gartoki O.Bang-Haas, 1927

Figs. 4u–v, 6a, 35.

Triphysa phryne gartoki O.Bang-Haas, 1927; Horae Macrolep. Reg. Pal. 1: 50, t. 7, f. 23. Type locality: "Thibet occ.: Gartok" [Garyarsa, Tibet, China]. "Steht der *phryne biocellata* Stgr. aus Amdo am nѡchsten, etwas heller braungrau. Die beiden, schwarzen Ozellen vor dem Vfl Saum sind auf der Oberseite kaum bemerkbar. Die Adern auf allen Flѡgeln sind weiѡ angelegt und die der Hfl Zelle treten deutlich hervor; Unterseite der Hfl kleine Augen."

Lectotype male, **designated here**, with labels: handwritten on white paper „Triph. phryne | gartoki OBHaas“; printed on white paper „Gartok | Thibet c.“; printed on white paper „ex coll. 1/1 | Bang-Haas“; printed on white paper „Horae Macrolep. | Vol. I. abgebildet | t. 7 f. 23 | beschrieb. p. 50“; printed on pink paper „Type | O.Bang-Haas“; printed on red paper „Lectotype ♂ | *Triphysa phryne* | gartoki Bang-Haas, 1927 | Horae Macrolep. reg. Pal. 1.: 50 | Dubatolov, Korb, Yakovlev des. 2013“.

Diagnosis. This subspecies differs from all others by its small size (forewing length 15 mm); by wide light border and light pattern along the veins on the wings' upperside; by poorly visible (small) dark spots on upperside centered by few white scales; and by mottled and very bright (contrasting) underside pattern.

Material examined. 1 male (lectotype) (MHUB); 1 male, 1 female, Tibet (ZMHU); 4 males, 1 female, Gartok Thibet c. (ZISP).

Distribution. E. Tibet.

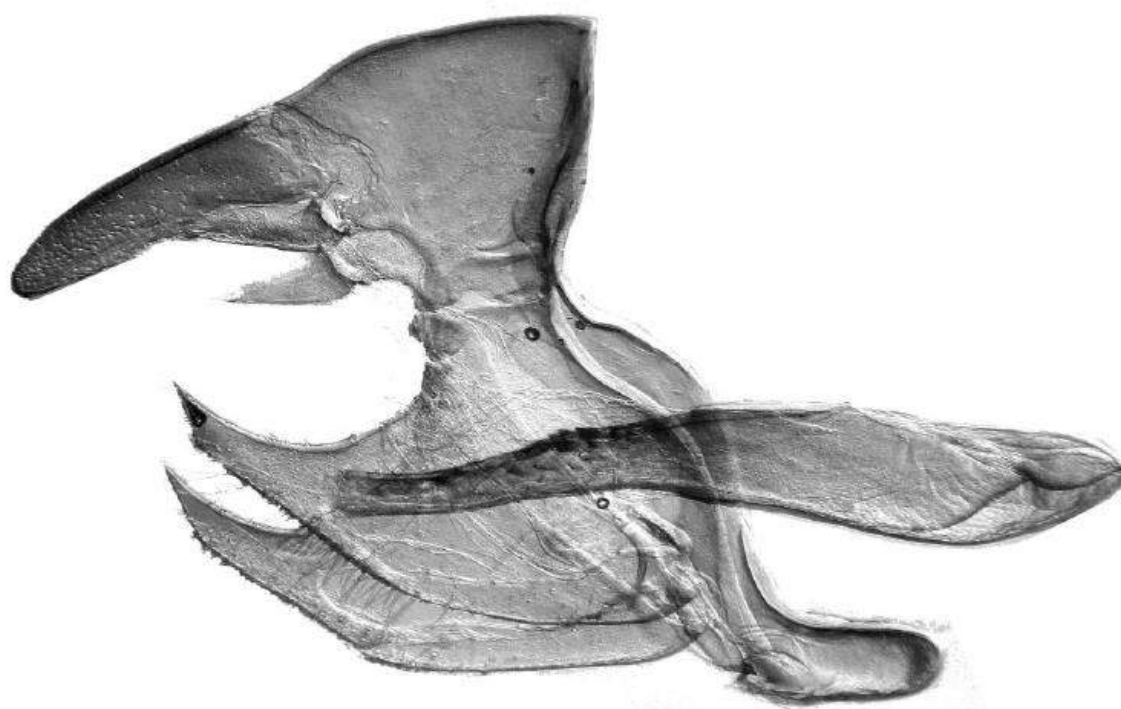


Figure 35. Male genitalia (lateral projection) of *Triphysa nervosa gartoki* Bang-Haas, 1927, lectotype.

Triphysa nervosa brinikhi Dubatolov, Korb et Yakovlev, ssp. n.

Figs. 5a–d, 6a, 17, 31.

Description. *Male.* Forewing length 18–19 mm. Forewing relatively wide with rounded apex. Wing upperside dark-brown with thin (about 0.5 mm) and bright fringes. The entire area of wings covered by suffusion of light scales. Eyespots on wings' underside are very small, on the forewing they are slightly centered by white color; on hindwing underside these eyespots are mostly reduced. Wings' underside with well visible suffusion of light scales. Central part of hindwing underside with fuzzy yellow pattern of wide strokes between veins, which are highlighted by wide dull white strokes. *Female.* Forewing length 17–18 mm, wings white or white-yellowish, the wings pattern is same as in the male.

Diagnosis. It differs from *T. nervosa nervosa*, the closely related subspecies, by the following features: postdiscal spots are almost always visible (though much reduced); cubital spots on the forewing underside are slightly larger than the other spots, in females the spots are not visible on the upper surface; white edging on the

wings' upperside is very narrow; white veins on the underside are expressed very well, but the drawing is not mottled; on both wings' surfaces a strong suffusion of light scales is expressed.

Etymology. New subspecies named after V. Brinikh, a well known Russian ecologist.

Material examined. Holotype, male, Russia, Chita Reg., Onon distr., 18 km WSW Nizhniy Zasuchey vill., Butyvken lake, *Pinus* forest, steppe, 4-VI-1995, leg. V. Dubatolov & R. Dudko (ISEAN). Paratypes, 5 males, 4 females, Chita reg., 7 km upper Nizhniy Zasuchey vill., left bank of Onon river, Malyy Batur place, near bridge, 3-VI-1995, leg. Dubatolov, Dudko & Lyubchansky (ISEAN); 1 male, 1 female, Transbaikalian (Troizkosavsk), 1908 (ZMHU); 7 males, 6 females, 18 km WSW Nizhny Zasuchey, Butyvken lake, *Pinus* forest, steppe, 4-VI-199, V.V.Dubatolov (ISEAN); 6 males, 5 females, Chita reg., Daurian Nature Reserve, NE bank of Zun-Torei lake, Kuku-Khadan, 8-VI-1995, leg. Dubatolov & Dudko (ISEAN); 2 males, same locality, 10-V-1995 (ISEAN); 1 female, same locality, 11-VI-1995 (ISEAN); 1 female, same locality, 7-VI-1995 (ISEAN); 2 males, 2 females, Gazimur river left bank 2-3 km up of Kungur, 25-V-2001, V.V.Dubatolov, S.Gordeev, T.Vlasova (ISEAN); 1 male, 4 females, Chita reg., Daurian Nature Reserve, NE bank of Zun-Torei lake, between Kuku-Khadan and Gydyrgun, 9-VI-1995, leg. Dubatolov (ISEAN); 1 male, 1 female, Chita reg., Daurian Nature Reserve, NE bank of Zun-Torei lake, near Gydyrgun, 11-VI-1995, leg. Dubatolov (ISEAN); 2 males, 1 female, Chita reg., Daurian Nature Reserve, NE bank of Zun-Torei lake, Khadanyata place, 11-VI-1995, leg. Dubatolov (ISEAN); 1 male, Chita reg., Daurian Nature Reserve, SW bank of Barun-Torei lake, between kordon Bulum-Khuduk and Nizhnii Mukei lake, 15-VI-1995, leg. Dubatolov (ISEAN); 3 males, 1 female, Tschita Transbaikalian (ZISP); Nerchinsk, K. Gazimur [?Kavykuchi Gazimurskie] 15.VI.[1]909 1 female, 17.VI.[1]909 1 female, 25.VI.[1]909 1 female, 25.V.[1]910 1 male, 26/V 1910 Fabri coll., 1 male; 2.VI.[1]910 1 male, 5.VI.[1]910 1 male, 6.VI.[1]910 1 male (ZISP).

Distribution. Onon river valley (including Sokhondinsky nature reserve); upper course of Gazimur river (without lower part). Populations from Eastern Mongolia (Kerulen river valley) (Korshunov, 1977) can belong to this subspecies as well. The border between this new subspecies and others is Shilka and Onon rivers.

Triphysa nervosa tscherski Grum-Grshimailo, 1889 [1890]

Figs. 5e-h, 6a, 18, 33.

Triphysa phryne tscherskii Grum-Grshimailo, 1889 [1890]; Ежегодник Зоол. Муз. Имп. Акад. Наук [Ezhegodnik Zoologicheskogo Museia Imperatorskoi Akademii Nauk] 4: 461. Type locality: "Jakutsk", according to the lectotype designation.



= *Triphysa albovenosa sacha* Korshunov, 1996; *Additions and corrections to the book "The Diurnal Lepidoptera of Asiatic part of Russia"*, Novosibirsk: 30-31. Type locality: "Якутск" [Russia, Yakutiya Rep., Yakutsk].

Diagnosis. Closely related to *T. n. brinikhi* Dubatolov, Korb & Yakovlev, ssp.n., but the small eyespots are not present or if present, they are almost always bright without white centres. Wings' upperside sometimes can have thin pale edges. Cubital spots in postdiscal area on forewing underside with no tendency to increase.

Material examined. Lectotype male, "Якутскъ. Черскій кВКНМ [Yakutsk, Tschersky]" here designated (ZISP). Paralectotypes: 1 male, same locality, 1 male, coll. N.Ya. Kuznetsov (ZISP); 7 males, [18]91 Triph. Tscherskii 18031 (ZISP); 1 female, Yana, on N from Verkhoyansk, 21-24.V.[18]85, Bunge and Tol' (ZISP); 2 males, Verkhoyansk Yakut. Obl., 18.VI.[18]85, Bunge and Tol' (ZISP); 1 male, 2 females, Olenek river, between N. Tomb. and Alakit, VII.[18]74, Tschekanovsk.[y].

1 female, Yakutsk, 5-VI-1990 (RYB); 1 male, 1 female, Yakutsk, 10-20-VI-2003, leg. Berezhnoi J. (ASV); 2 males, Yakutsk, botanical garden, 28-29-V-1985, V.V. Dubatolov, L. Popova (ISEAN); 1 male, 2 females, Yakutsk, botanical garden, Chugur-Murun, 13-VI-1968, Ammosov (ISEAN); 1 male, Yakutsk, 5 km of the road to Magan (westwards from Yakutsk), swampy river valley, 1-VI-1985, V.V. Dubatolov (ISEAN); 2 males, 50 km S Yakutsk, Oktemzy settlement environs, 1-VI-1977, Ammosov (ISEAN); 1 male, 1 female, Khaptagai, Tamma valley, 10-VI-[19]74, Ammosov (ISEAN); 2 females, Olekminsk, 29.V.-1.VI.1911, Kharitonov (ZISP); 2 females, Yakutsk, 7-21.VI O. Herz (ZISP); 1 male, Yakutsk, 25.V.[19]11 (ZISP); 1 male, near Yakutsk, Kharitonov, 25.V.[19]11 (ZISP); 2 males, near Yakutsk, 29.V.1911-1.VI.1911, N. Kharitonov (ZISP); Yakutsk, Yakutsk Museum, 1 male; 1927 3 males, 4 females, 15.VI.[19]27; 5 males, 11 females, 16.VI.[19]27 2 females, 17.VI.[19]27 1 male, 19.VI.[19]27 4 males, 9 females, 17.VII.[19]27 2males 1female (ZISP); 2 females, Yakutsk, Moskvina, 15.VI.[1]927 (ZISP); 2 males, Yakutsk, Yakut.[skoe] Otd.[elenie] R.[usskogo] Geogr.[aficheskogo] Ob.[stchestva], 8.VI.[1]927, Moskvina (ZISP); 1 female, Yakutsk, Atlasovskaya Pad', 10.VI.[1]928 (ZISP); 2 males, 2 females, Siberia s-or prope Yakutsk loc. Sergeliah, N.Moskvina (ZISP); 2 males, 3 females, Sergelyakh near Yakutsk, 18.VI.[19]25, L. Bianki (ZISP); 1 male, Sergelyakh, 3 km near Yakutsk, 6.VI.[1]928, 2 males, 8.VI.[1]928, 1 female, 9.VI.[1]928 (ZISP); 1 male, 3 km NW Yakutsk, 1.VI.1985, V.V. Dubatolov (ZISP); 1 male, Yakutsk, 5 km on the road to Magan, 1.VI.1985, V.V. Dubatolov (ZISP); 2 females, Yakutsk, Botanical garden, 9.VI.1985, V.V. Dubatolov (ZISP); 1 male, Tomtor, Dulgolakh, 20.VI.[1]28, Nikiforov (ZISP); 1 female, Verkhoyansk, VI.[1]913, Mikhailov (ZISP); 1 male, near Verkhoyansk, 8-10.VII.[19]09, Solovieva, Markerov

Distribution. Russia: Yakutia: Olenek river valley, Central Yakutia (Burnasheva, 2012); Kil'demzy, Chochur-Muran, Tabaga and Pokrovsk; Yana river valley. This



subspecies unlike *T. nervosa nervosa* and inhabits only the plain areas of Central Yakutia, Olenek and Yana river valleys.

Key to the species of *Triphysa* on male genitalia

- 1 (2) Apex of aedeagus with massive highly sclerotized cog...*T. issykkulika*
- 2 (1) Apex of aedeagus without massive highly sclerotized cog.
- 3 (6) Valva triangular (excluding caudal branch), with sharp spike on its apex.
- 4 (5) Gnathos short, at least 5 times shorter than uncus; aedeagus v-shaped or straight...*T. phryne*
- 5 (4) Gnathos long, at least 3 times shorter than uncus; aedeagus s-shaped...*T. nervosa*
- 6 (5) Valva pear-shaped (including caudal branch), with sharp apex (no spike is present)...*T. striatula*

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