http://zoobank.org/urn:lsid:zoobank.org:pub:165E39D8-EC73-4E29-9304-07A2A55F5FB8
DOI: 10.24412/2226-0773-2022-11-2-195-222
EDN: ANMURF

Taxonomy notes on *Echinocerus floralis* (Pallas, 1773) with a description of a new subspecies from Greece (Coleoptera, Cerambycidae)

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Key words: Coleoptera, Cerambycidae, taxonomy, new subspecies, name restored, new synonym, key.

Abstract: Nominative subspecies is characterized by many rather pale specimens with more or less considerable reduction of elytral design up to total disappearance of transverse elytral bands; it is distributed along steppe zone of Ukraine, Russia and Kazakhstan.

Echinocerus floralis centaureus **ssp. n.** is described from Greece (Stomion, Mt. Ossa). *E. f. aulicus* (Laicharting, 1784), **stat. rest.** (type locality - Tyrol) is accepted for the populations from West Europe (without Greece). *E. f. armeniacus* (Reitter, 1890), **stat. rest.** (type locality - Armenia) is accepted for the populations from Transcaucasia and Near East. *E. f. pilifer* (Reitter, 1890), **stat. rest.** (type locality - Amasya, Turkey) is accepted for Central Anatolia. *E. f. armeniacus* (Reitter, 1890), **stat. rest. =** *Neoplagionotus anatolicus* Vartanis, 2019, **syn. nov.**

Introduction

Echinocerus floralis (Pallas, 1773) was described as *Cerambyx* from the steppe area between Ural River and Irtysh River ("frequens in australioribus ad Iaikum et Irtin"). Many specimens of the species from that area are available at my disposal. They represent a very peculiar pale form (sometimes without transverse elytral stripes at all), which is not known in West Europe. So, the external appearance of the nominative populations strongly differs from well know European specimens, which must be accepted as another subspecies.

All taxa described in the article are so different on genital level that most probably represent different species. New investigations on south materials are necessary for adequate

understanding of the problem.

Materials and methods

Material was collected manually. Specimens used in morphological studies were killed by ethyl acetate. All photographs were taken with Canon PowerShot G10 digital camera equipped with Cannon Zoom lens 5X IS 6.1-30.5 mm 1:2.8-4.5 and microscope AmScope SM745NTP. The illustrations were edited with Adobe Photoshop 7.0 and Helicon Focus 3.20.

Acronyms of collections:
MD - collection of M.L. Danilevsky (Moscow, Russia)
ML - collection of M.A. Lazarev (Moscow, Russia)
VG - collection of V.Yu. Gazanchidis (Moscow, Russia)
SM - collection of S.V. Murzin (Moscow, Russia)
ZMM - collection of Zoological Museum of Moscow University

Taxonomy

Echinocerus floralis (Pallas, 1773)
Figs. 1-13.

Cerambyx floralis Pallas, 1773: 724 - “australioribus ad Iaikum et Irtin”.

Callidium fasciatum Herbst, 1784: 98 - Ostindien.

Callidium indicus Gmelin, 1790: 1856 - India, (nomen nov. pro *Callidium fasciatum* Herbst).

Clytus annulus Fabricius, 1801: 352 - “Cap. Bon. Spei.”; Schönherr, 1817: 470 - “Cap. Bon. Spei.”; Castelnau & Gory, 1841: 111 - “Cap Bonne-Éspérance”; Aurivillius, 1912: 373 - “Kapland”.

Plagionotus floralis, Chernyshov, 1930: 12 - Sosenka of Kaluga Region; Plavilstshikov, 1940: 461 - steppe zone of European part of the USSR, northwards in the west to about 52ºN -54ºN, northwards in the east to about Urzhum and Sarapul; eastwards Volga known in Ufa Urals, further southwards everywhere up to Mugodzhary; Crimea; Caucasus with Transcaucasia; south-west Siberia to about Irtysh and Tarbagatay; North Iran, Turkish Armenia, Asia Minor, Messopotamia, Syria, Palestine, in the West Europe northwards to Sweden; Gressitt, 1951: 263 - Europe, Siberia, Kirghis, Soviet Dzungarie, Asia Minor; Villiers, 1967b: 361 - Europe centrale et méridionale, Asie Mineure, Sibérie centrale et occidentale, Caucase, Nord de l'Iran; Bense, 1995: 286-287; López-Colón, 1997: 226, 227, 229, 231 - Francia, Crimea, Caúcaso, Transcaucasia, Siberia occidental y central, nordeste de Turquía, Asia Menor, Siria y norte de Irán; Hua, 2002: 225 - China: Xinjiang; Siberia, Europe, Syria; Brustel, Berger & Cocquempot, 2003:451; Sama, 2003: 80 - Europe, Asia Minor, Caucasus,

Transcaucasia, northern Iran, Siberia, Middle East; Berger, 2012 17, 397 - France: Jura, Haute-Savoie, Ain, Puy-de-Dôme, Isère, Ardèche, Alpes-de-Haute-Provence, Vaucluse, Var, Gard, Hérault, Pyrénées-Orientales. Europe centrale et méridionale, Asie-Mineure, Caucase, Transcaucasie, nord de l'Iran, Moyen-Orient, Sibérie.

Echinocerus floralis, Villiers, 1978: 385 - Europe centrale et méridionale, Sibérie occidentale et centrale, Asie Mineure, Nord de l'Iran; Vives, 2000: 194; Vives & Alonso-Zarazaga, 2000: 590; Danilevsky, 2010: 229 - Azerbaijan, Albania, Armenia, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Georgia, Greece, Hungary, Italy, Latvia, Lithuania, Macedonia, Moldavia, Poland, Romania, Russia: North, Central and South European Territory, Serbia and Montenegro, Slovakia, Slovenia, Spain, Switzerland, Turkey, Ukraine, Iran, Israel, Jordan, Kyrgyzstan, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, Eastern and Western Siberia, China: Xinjiang; Lin & Yang, 2019 (ed.): 159 - "China: Xinjiang. Iran, Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Turkey, Azerbaijan, Georgia, Armenia, Jordan, Russia (Europe); Europe"; Vartanis, 2019: 346 - Europe, European Russia, European and Asian Turkey, Armenia, Azerbaijan, Georgia, Iran, Iraq, Israel, Jordan, Lebanon, Siberia, Kyrgyzstan, Kazakhstan, Tadzhikistan, Turkmenistan, Uzbekistan, China; Chen, Liu & Li, 2019: 159 - China: Xinjiang. Iran, Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Turkey, Azerbaijan, Georgia, Armenia, Jordan, Russia (Europe); Özdikmen & Tezcan, 2020: 373 - "Turkey: Gümüşhane, Kayseri, Konya, Mersin, Nevşehir, Niğde provinces"; Tezcan & al., 2020: 51 - Turkey: Diyarbakır, Kütahya, Manisa, Mardin, Muğla and Şırnak provinces; Kasatkin, 2020: 400 - "Cape of Good Hope in South Africa" (lectotype of *Clytus annulus* Fabricius,1801).

Paraplagionotus floralis, Kuleshov& Romanenko, 2009: 36; Özdikmen, 2006: 79, part. - Turkey: Ankara, Adana, Niğde, Kayseri, İçel, Karaman, Samsun.

Plagionotus (*Echinocerus*) *floralis*, Özdikmen & Turgut, 2009: 459 - Europe (Spain, France, Italy, Albania, Slovenia, Croatia, Bosnia-Herzegovina, Serbia, Macedonia, Greece, Bulgaria, European Turkey, Romania, Hungary, Austria, Switzerland, Germany, Czechia, Slovakia, Poland, Latvia, Lithuania, Ukraine, Crimea, Moldavia, European Russia, European Kazakhstan), Siberia, Central Asia, Caucasus, Armenia, Transcaucasia, Turkey, Iran, Jordan; Özdikmen, 2014: 691 - Turkey.

Echinocerus floralis floralis, Danilevsky, 2020: 239; Özdikmen, 2021: 1304 - Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Central European Territory, Czech Republic, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Moldavia, Macedonia, North European Territory, Poland, Romania, Serbia and Montenegro, Slovakia, Slovenia, Spain, South European Territory, Switzerland, Turkey, Ukraine, Azerbaijan, Armenia, East Siberia, Georgia, Iran, Iraq, Israel, Jordan, Kyrgyzstan, Kazakhstan, Lebanon, Tajikistan, Turkmenistan, Uzbekistan, Turkey, west Siberia, China: Xinjiang.

Type locality. Steppe area between Ural River and Irtysh River, according to the original description.

Body long and narrow, without numerous erect serae; frons without carinae; antennae reaching to about elytral middle in females or slightly longer in males; antennal joints slightly angulated, without apical spines; prothorax rounded, about as long as middle width, slightly shorter or slightly longer; scutellum transverse, totally or partly covered with yellow pubescence, but sometimes completely black; metepisternum about 3-4 times longer than wide, usually completely covered with yellow pubescence; elytra rounded apically, black with 5 transverse yellow stripes (basal, apical and three in between), which could be partly widened occupying sometimes whole elytral surface; femora never clavate, without erect setae; hind femora never reach elytral apices. Genital structures are rather peculiar (Kasatkin, 2005).

Body length in males: 6.0-15.5 mm, width: 1.9-4.3 mm; body length in females: 8.2-20.0 mm, width: 1.9-5.3 mm.

Distribution. Centre and south of West Europe, Baltic republics (Lithuania and Latvia), Ukraine, Moldova, Central and south Russia northwards to about Kirov Region and eastwards to Ob' River, Kazakhstan and Central Asia, Caucasus with Transcaucasia, Iran, Iraq, Syria, Palestine, Turkey, China.

1. *Echinocerus floralis floralis* (Pallas, 1773)

Figs. 1, 4, 9.

Cerambyx floralis Pallas, 1773: 724 - australioribus ad Iaikum et Irtin.

Clytus zebra Dalman, 1817: 194; White, 1855: 265 - Odessa, Crimea.

Clytus variabilis Motschulsky, 1860a: 144 - "des Steppes de Volga, de l'Oural et de l'Irtych"; 1860b: 311 - "de la Songarie"; 1860c: 305 - "de la Songarie"; Lazarev, 2019a: 29 - lectotype designation, male: "Camp. Kirg.", "Songarie, des Steppes de Volga, de l'Oural et de l'Irtych"; 2019b: 1280 - lectotype: "Camp. Kirg.".

Clytus abruptus Kraatz, 1871: 408 - "Sarepta".

Clytus pruinosus Kraatz, 1871: 409 - "Sarepta".

Echinocerus floralis, Karpiński & al., 2018: 76 - East Kazakhstan Region.

Type locality. Steppe area between Ural River and Irtysh River, according to the original description.

Fig. 1. *E. f. floralis* (Pallas, 1773): 72 males, 38 females, Esil, 300 m, 12.6.2001, M.Danilevsky.

The taxon is characterized by many rather different forms of elytral design; transverse black elytral stripes can be wide or narrow, or strongly reduced and totally absent, though complete elytral design is known in all population. Normal European form has four wide black elytral stripes.

The reduction of elytral design goes in two directions. One line of forms demonstrates gradual discoloration up to completely white or yellowish elytra without stripes. Several forms have complete set of black transverse stripes, but more or less lightened to nearly indistinct. Another line demonstrates partly reduction of black stripes, which begins from the posterior elytral half. Several

specimens have anterior black stripe only or anterior and middle stripes, when posterior black stripe is totally absent. Very rare just contrary only posterior black elytral stripe is distinct. Sometimes elytra without transverse black stripes have black suture.

Pronotum can be totally covered with dense yellow or yellowish pubescence, often with more or less wide central dark area.

Scutellum of the nominative subspecies is always yellow; pronotum is usually with paler pubescence than in West European forms, sometime totally pale, yellow or greyish. Legs are sometimes more or less darkened.

Apex of penis is less attenuated than in any other subspecies, and less widened posteriorly; parameres very narrow, strongly elongated, parallelsided, not widened apically.

Body length in males: 6.5-13.1 mm, width: 1.9-3.6 mm; body length in females: 8.2-14.2 mm, width: 2.1-4.2 mm.

Material. Russia: *Samara Region*: 1 male, Buzuluksky Bor National Park, 2.VII - ZMM; 1 female, Samara - ZMM; 1 male, Petrovsk, 19.8.1911 - ZMM; 1 female, Zhiguli, 1914 A.Markov - ZMM; 2 males,1 female, Zhiguli, 6.1915 V.Bostanjoglo - ZMM; 19 males, 9 females, Samara, Nikolaevsk, 6.6.1911, 8.6.1911, 11.6.1911, 15.6.1911, 16.6.1911, 20.6.1912, 8.1912, 16.6.1914, 6.1915, V.Bostanjoglo - ZMM; 1 female, Samara Reg., Bolshaya Chernigovka Distr., Krasnooktyabrsky env., 16,20.6.2001, A.Tilli - MD; *Republic of Bashkortostan:* 3 males, Sterlitamak, 21.6.1935, A.Kamensky - ZMM; 14 males, 1 female, Sterlitamak, 23.6.1935, A.Kamensky - ZMM; 1 female, Sterlitamak, 2.7.1935, A.Kamensky - ZMM; *Voronezh Region*: 2 males, Bobrov - ZMM; *Saratov Region*: 1 male, Nikolaevsk, 6.6.1928, A.Mentschikov - ZMM; 2 males, Nikolaevsk, Melovoe, 27.6.1928, 29.6.1928, A.Mentschikov - ZMM; 1 male, Volsk, 8.7.1993, M.Danilevsky - MD; 2 males, Voskresensk Distr., Chardym, 22.6.2006, S.I.Khvylya - VG; *Volgograd Region*: 1 male, Sarepta - ZMM; 1 female, Sarepta, v. Bodemeyer - ZMM; 1 male, 1 female, Sarepta, 6.1907 - ZMM; 4 males, 4 females, Sarepta, 20.6.1929, B.Brandt - ZMM; 1 female, Filonovskaya, 2.7.1911, A.Illinsky - ZMM; 4 males, 1 female, Uryupinsk, 11-12.6.1913, A.Kirillov - ZMM; 1 male, Chir River, 22.5.1930, A.Menstschikov - ZMM; 1 male, Kamyshin, 5.6.1949, Viktorov - ZMM; 1 female, Novaya Olkhovka, 16.6.1949, Viktorov - ZMM;

2 males, Stalingrad, Grigorova Balka, 1.6.1950, Lure - ZMM; 6 males, Stalingrad, 3.6.1951, Lure - ZMM; 1 males, Stalingrad, 14.6.1951, Lure - ZMM; 1 male, Stalingrad, 26.6.1960, Pupov - ZMM; 1 male, Stalingrad, Gornaya Polyana, 7.6.1951, D.Panfilov - ZMM; 1 male, Pallassovka Distr., 5.7.1952, A.A.Peredelsky - MD; 2 males, 1 female, Volgograd, Olkhovka Distr., Mikhailovka, 16.5.2005, D.A.Safronov - ML; *Rostov Region*: 1 male, 10 km N Kamensk-Shakhtinsky, Glubokaya River 4.6.1951 K.Arnoldi - SM; 1 male, Rostov Reg., 24.6.1984 - MD; 1 male, Ust-Donetsk Distr., 2.6.1976, A.Grazhdankin - SM; 1 female, 250 km W Volgograd, Morozovsk, 140 m, 20.6.1998, M.Danilevsky - MD; 3 males, 1 female, 200 km N Rostov, Millerovo, 120 m, 19.6.1998, M.Danilevsky - MD; 1 male, Millerovo env., 16-28.6.2002, Yu.Leman - SM; 2 males, Tikhaya Zhuravka, 30.5.2010, M.Danilevsky - ML; 1 male, Oktyabrsky Distr., 46.2918ºN, 39.7208ºE, 7.2012, Yu.Liman - SM; *Krasnodar Region*: 1 female, Novorossiysk, E.Koenig - ZMM; 1 male, Novorossiysk, 1900 - ZMM; 1 female, Novorossiysk, .1910, Dr.Lgocki - ZMM; 1 male, Shirokaya Balka, 15.6,1903, A.Silantev - ZMM; 1 female, Abrau, 6.1921 - ZMM; 1 female, Belaya River, VI.1922 - ZMM; 1 male, 2 females, Novorossiysk 22.6.1926 - ZMM; 1 male, 1 female, Novorossiysk 27.6.1927, K.Arnoldi - ZMM; 1 male, Anapa, 18.6.1918, Zavilejsky - ZMM; 1 male, Anapa, 20.6.1924 - ZMM; 1 female, Seversky District, 9.7.1944, V.Malyshev - ZMM; 1 male, Seversky District, 22.8.1944 - ZMM; 2 males, Gelendzhik, 16.6.1957, Antonova - ZMM; 1 male, 1 female, Sukko, 44º46'N, 37º23'E, 1.6.2010, M.Danilevsky - ML; 1 female, Ubinskoe, 25.6.1954, L.Medvedev - ZMM; 1 female, Ubinskoe, 24.6.1970, M.Danilevsky - MD; 2 males, 1 female, Blagoveshchenskoe, 45º03'N, 37º03'E, 9.6.2010, M. Danilevsky - ML; *Stavropol Krai:* 1 female, Goryachevodsk, 6.19.1928 - ZMM; 1 male, Kislovodsk - ZMM; 1 female, Voroshilovsk (Stavropol), 6.1939, P.Reznik - ZMM; *Karachay-Cherkessia Republic*: 1 male, 1 female, Krasnogorka, 9.6.1908 - SM; *Chechen Republic*: 15 males, 7 females, Grozny, 10.6.1913, N.Plavilstshikov - ZMM; 2 males, Grozny, 19.6.1913, N.Plavilstshikov - ZMM; 2 males, 1 female, Grozny, 21.6.1913, N.Plavilstshikov - ZMM; 1 female, Grozny, 26.6.1913, N.Plavilstshikov - ZMM; *Republic of Dagestan*: 1 male,

Buynaksk Distr. - MD; 1 female, Sarykum, 20.5. - MD; 1 male, 1 female, Kumtorkalinsky Distr., Sarykum, 9.6.1989, V.Korolev - ML; 1 male, Agvali, 28.8., D.Matveev - MD; 2 males, Makhachkala, 7.6.1982, V.Yanushev. ML; 1 male, 3 females, Makhachkala, Tarki-Tau Mt., 8.6.1989, V.Korolev - ML; *Novosibirsk Region*: Karasuk District., Astradym, 30.7.1984, I.Meshchersky - ZMM; *Orenburg Region*: 3 males, Orenburg - ZMM; *Crimea*: 1 male, Alupka, A.Hernigov - ZMM; 1 male, Feodosia, V.Muralevich - ZMM; 1 male, Feodosia, 25.6.1898, V.Muralevich - ZMM; 1 male, Feodosia, Dvuyakornaya bukhta, 6.6.1900, V.Muralevich - ZMM; 1 male, Koktebel, 1.6.1904 - ZMM; 1 male, Foros, 6.1900 - ZMM; 1 male, Simferopol, 23.5. - ZMM; 3 males, 3 females, Simferopol, 27.5.1908, G. & K.Khristoforov - ZMM; 2 males, Simferopol, 30.5.1908, G. & K.Khristoforov - ZMM; 1 male, Simferopol, 30.5.1908, I.Parfentiev - ZMM; 3 males, 2 females, Simferopol, 19.6.1953, B.V.Stark - ZMM; 1 male, Yalta, 22.5.1905, I. Schukin - SM; 1 female, Yalta, 1.6.1989, A.Shadenkov - MD; 1 male, Yalta, 20.7.1985, S.Khvylya - VG; 1 male, Massandra, 23.5.1905, I.Schukin - SM; 1 male, Massandra, 23.5.1925 - ZMM; 1 male, 1 female, Alupka - ZMM; 1 male, Alupka, A.Heiningson - ZMM; 1 male, 1 female, Alupka, 19.5.1927 - ZMM; 1 female, Mt. Chatal-Kaya, 5.6.1911, Ts.Zhikharev - ZMM; 1 female, Koreiz, 16.7.1912 - ZMM; 1 male, Koreiz, 16.7.1912 - ZMM; 1 male, Pionerskoe, 21.6.1927, L.Zimina - ZMM; 1 female, Foros, 6.1930 - ZMM; 2 females, Sevastopol, Sapun Mt., 29.5.1975, L.Zimina - ZMM; 1 male, 1 female, Alushta, 25.7.1995, S.Khvylya - VG; 1 male, Kazantip, 9.6.1985, I.Plyushch - MD; 13 males, 5 females Kazantip, 9.6.1985, I.Plyushch - ML; 1 male, 2 females, Kazantip, 28.6.1987, K.Efetov - ML; 1 female, Bakhchisaray Distr., Prokhladnoe, Mt. Prisyazhnaya, 13.6.1983, V.A.Korolev - MD; 1male, 1 female, Mt. Opuk, 15.6.1987, K.Efetov - ML; 1 female, Mt. Opuk, 45º2’58”N, 36º14’52”E, 1 m, 20.5.2019, M.Danilevsky - ML; 4 males, 3 females, Sevastopol N Uchkuevka env., 44.640ºN, 33.535ºE, 50 m, 10-25.5.2015, S.Murzin - SM; 1 female, Sudak, 20.6.1987, K.Efetov - ML; 1 female, Karadag, 21.6.1987, K.Efetov - ML; 1 female, Krasnaya Polyana, 5.7.1987 K.Efetov - ML; 1 female, Agarmysh, 25.7.1987, K.Efetov - ML; 2 males, 2 females, Verkhnyaya Kutuzovka, 27.6.1987, K.Efetov - ML; 4 males, 2 females,

Belogorsk, Sary-Kaya, 15.6.2017, K.Efetov - ML; 5 males, 3 females, Bakhchisaray, 17.6.2017, K.Efetov - ML; 2 males, 4 females, Privetnoe, 25 km W Sudak, 44º48’56”N, 34º39’34”E, 300 m, 19.5.2018, M.Danilevsky - ML; 2 males, 2 females, South Bank, Kanaka, 44º47’38”N, 34º38’51”E, 68 m, 30.5.2019, M.Danilevsky - ML; **Ukraine:** 2 males, Ekaterinoslav (Dnepropetrovsk) - ZMM; 2 males, 1 female, Lugansk, Provalsky military horse factory, 8.6.1908, 11.6.1908, 22.6.1908, E.V. Pylnov - ZMM; 5 males, 2 females, Lugansk, Provalsky military horse factory, 5-6.6.1908, 11.6.1908, 6.7.1908, Troitsky - ZMM; 1 male Donbas, Derkul River, 23.7.1956, K.Arnoldi - SM; 1 male, Kirovohrad (Kropyvnytskyi), 22.6.1940 - ZMM; 1 male, 1 female, Veliko-Anadol, forest farm, 26.6.1955, V.Shavrov - SM; 1 female, Voroshilovgrad (Lugansk), 8.6.1951, K.Arnoldi - SM; 1 female, Kherson Region, Daryevskie Dachi, 9.6.1973 (along Ingulets River), 11.6.1973, 17.6.1973 Chistyakov - SM; 1 male, Askania-Nova 21.7.1974 S.Murzin - SM; 1 male, 4 females, Askania-Nova, 11.7.1981, M.Nesterov - MD; **Kazakhstan:** 1 male, Semipalatinsk, A.Solotarew - ZMM; 1 male, 1 female, Ulba, 15.6. - ZMM; 1 male, Kalzhyr River, Cherny Irtysh, 27.6.1930, Lukyanovich - ZMM; 1 male, 1 female, Dzhalybek, 11.6.1954, P.Rafes - ZMM; 2 males, Kazakhstan, 3.7.1971, 8.7.1971, Egorov - MD; 1 male, Naurzum, Bet-Agach, 9.7.1938 - ZMM; 7 males, 11 females, Naurzum, 8.7.1931, 10.7.1931, 12.7.1931, 26.7.1938 - ZMM; 1 female, Naurzum, Kutan-Tal, 21.7.1938 - ZMM; 1 male, prov. Akmolinsk, Borovoe, 20.7.1932 - SM; 2 females, Dzhanybek, 24.6.1970, T.Ponomarev - SM; 2 females, Dzhanybek, 27.6.1974. D.Ivanov - MD; 2 males, 2 females, Dzhanybek, 26.6.1950, 15.8.1950, A.Safronov - ZMM; 1 female, Dzhanybek, 25.7.1974 - MD; 1 male, Dzhanybek, 20.7.1974, Subbotin - MD; 2 males, 1 female, Dzhanybek, 27.6.1974, D.Ivanov - ML; 2 males, 35 km SSW Altyndy (old Yubileyny), Mugodzhary Hills, 16.6.1985, M.Nesterov - ML; 4 males, 4 females, Uralsk, 10.6, 15.6., Zhuravlev - ZMM; 7 males, 14 females, Uralsk, Rozhkovo, 51º39’N, 52º19’E, 80 m, 15.6.1999, M.Danilevsky - ML; 17 males, 10 females, Uralsk Reg., Chapaev, 12.6.1999, M.Danilevsky - ML; 1 male, Kazakhstan, 150 km W Aktiube, 200 m 17.6.1999, M.Danilevsky - ML; 1 male, Aktyubinsk, Turgenevka, 10.6.2001, M.Danilevsky leg. - ML;

16 males, 14 females, Esil, 300 m, 12.6.2001, M.Danilevsky - MD; 72 males, 38 females, with the same label - ML; 1 male, 1 female, Putintzevo, 20 km N Zyryanovsk, 49º53'N, 84º23'E, 475 m, 23.6.2005, M.Danilevsky - ML.

Distribution. Steppe areas of Russia eastwards to about Novosibirsk, steppe areas of Ukraine and Kazakhstan.

2. *Echinocerus floralis aulicus* (Laicharting, 1784), **stat. rest.**

Figs. 5, 10.

Stenocorus arcuatus, Scopoli, 1772: 97 - "circa Tergestum" [Triest], (wrong determination).

Cerambyx nigrofasciatus Voet, 1781: 21 - Europa, (nomen nudum).

Clytus aulicus Laicharting, 1784: 103 - Tyrol.

Callidium florale Fabricius, 1793: 332 - Italia.

Clytus controversus Schrank, 1798: 679 - "Baiern".

Clytus floralis, Fabricius, 1801: 346 - Italia; Küster, 1846: 68 - "Im südlichen Europa"; White, 1855: 265 - Europe; Gemminger & Harold, 1872: 2929 - Europa; Pic, 1905: 392 - "Poucht-é-Kouh: Meillabandon".

Clytus (*Echinocerus*) *floralis*, Mulsant, 1862: 143 - "provinces de la France, surtout méridionlaes".

Plagionotus floralis v. *basicornis* Reitter, 1890: 213 - "Mitteleuropa, Ungarn, Frankreich".

Clytus (*Plagionotus*) *floralis*, Miller & Zubowsky, 1906: 60 - Kishenev, Bendery ("Fauna Bessarabiens").

Plagionotus floralis v. *massiliensis* Pic, 1951: 1 - "Marseille".

Plagionotus floralis, Miller & Zubowsky, 1910: 138 - Kishenev, Bendery ("Fauna Bessarabiens"); 1917: 188 - Kishenev, Bendery ("de Bessarabie"); Kiseleva, 1926: 128 - Stepanovka (Tomsk Region), Klyukvennaya (now Uyar of Krasnoyarsk Region); Iablokoff, 1954: 22 - "Sainte-Baume"; Medvedev S.I. & Shapiro D.S., 1957 - Kishenev, Bendery (Moldova); Villiers, 1967a: 22, part - Turkey: Yozgat, Ankara; Pedroni, 1999: 33 - Provincia di Bologna; Chatenet, 2000: 318 - Europe; Neculiseanu & Baban, 2005: 201 - Moldova; Özdikmen & Demir, 2006: 160 - Turkey: Ankara; González, Vives & Zuzarte, 2007: 41 "España: Islas Baleares (Mallorca)"; Allemand & Marengo, 2010: 185 - "Isère, Jura, Ain"; Koren & Perović, 2010: 127 - "Vozilići, Eastern Istria, Croatia"; Berger, 2012: 17, 397, part. - France: Jura, Haute-Savoie, Ain, Puy-de-Dôme, Isère, Ardèche, Alpes-de-Haute-Provence, Vaucluse, Var, Gard, Hérault, Pyrénées-Orientales. Europe centrale et méridionale, Asie-Mineure, Caucase, Transcaucasie, nord de l'Iran, Moyen-Orient, Sibérie; Topalov & al., 2014: 98 - "Bulgaria: Vitosha Mountain"; Dobrosavljević & Mihajlović, 2014: 25 - Serbia; Berger & Peslier, 2014: 576 - "France: rare et localisée, parfois très abondante dans le Midi et les régions montagneuses"; Siering, Fremuth & Heinemann, 2015: 49 - Prespa-Nationalparks in Albanien; Klausnitzer &

al., 2016: 527 - Mitteleuropa; Molnar, Szerényi & Szövényi, 2016: 49 - Hungary (Fundoklia Valley); Şabanoğlu & Şen, 2016: 320 - Turkey: "Isparta: Davraz, 37°48'29"N, 30°46'48"E, 1603 m; Kızıldağ National Park, 38°01'52"N, 31°22'27"E, 1441 m; Kovada Lake National Park, 37°36'51"N, 30°52'41"E, 913 m; 37°36'33.47"N, 30°53'45.21"E, 914 m"; Haack, 2017: 110 - Europe; Touroult & al., 2019: 98 - France; Bacal et al., 2020: 57 ("= *Echinocerus floralis"*) - Dănceni.

Echinocerus floralis, Kovács, 1998: 251 - Hungary; Efimov, 2001: 67, 69 - Kemerovo Region; Chyubchik, 2010: 114 - "Novye-Aneny distr., Ketrosu vill. env."; Ilić & Ćurčić, 2013: 83 - "Serbia: Rtanj Mountain"; Kadyrov & al., 2016: 56 - "Tajikistan"; Plewa & al., 2018: 180 - Albania: "County Gjirokaster: Petran at Përmet, 320 m a.s.l.", "County Fier: Divjaka at Lushnja, 0 m a.s.l.", "County Elbasan: Hotolisht at Librazhd, 290 m a.s.l."; Stolbov & al., 2019: 206 - Russia (Tyumenskaya Oblast); Özdikmen, 2019: 372 - Turkey (Çankırı Province); Gradinarov & Petrova, 2019: 68 - "Bulgaria: Vrachanski Balkan Nature Park"; Gradinarov & Petrova, 2020: 170 - "Bulgaria: Sarnena Sredna Gora Mountains"; Özdikmen & Tezcan, 2020: 373, part. - "Turkey: Gümüşhane, Kayseri, Konya, Mersin, Nevşehir, Niğde provinces"; Tezcan & al., 2020: 51, part. - Turkey: Diyarbakır, Kütahya, Manisa, Mardin, Muğla and Şırnak provinces.

Plagionotus (*Echinocerus*) *floralis*, Tekin & Özdikmen, 2015: 126 - "Turkey (Bursa): Inegöl".

Echinocerus floralis floralis, Özdikmen, 2022b: 1295 - "…Edirne, İstanbul and Kırklareli provinces in European Turkey (Thrace)".

Type locality. West Europe, Tyrol.

The taxon is characterized by complete set of four transverse black elytral stripes. Pronotum usually with more or less wide yellow anterior transverse stripe and postmedian stripe. Often narrow pronotal basal stripe (usually interrupted at middle) is also distinct. Pronotum with long erect setae; abdomen often totally covered with yellow pubescence, or with more or less wide glabrous areas along anterior border of the sternites.

Apex of penis is very similar to the nominative subspecies, but a little more sharpened and more widened posteriorly; parameres exceptionally short, rather wide, widened basally.

Body length in males: 6.0-13.0 mm, width: 2.0-3.8 mm; body length in females: 8.4-20.0 mm, width: 1.9-5.3 mm.

Material. Austria: 1 female, Umgeb. Wien, Reitter. Leder. - ZMM; **Moldova:** 1 male, Bessarabia, 16.6.1912 - ZMM; 1 male, 1 female, Krikovo, 18.6.2009, A.Zubov - ML. **Macedonia:** 3 males, 2 females,

Macedonia, Ohrid Lake, 6.1981, M.Slama - ML. **Bulgaria:** 1 male, Veliko-Tarnovo, 18.7.1972, S.Murzin - SM; 4 females, Mičurla, 23-30.6.1982, Sv.Bílý - MD; 2 females, S. Dobrudzha: Karakuz, 50 m, 26.6.1986, L.Penev - ML; 2 females, Lozenska Planina Mtn., NW Passarell vill., 820 m, 6.7.2004, T.Ljubomirov - MD; 1 female, Strouma valley, SW Zemen, 42º28'N, 22º44'E, 580 m, 4.8.2004, T.Ljubomirov - MD; 1 female, Strouma valley, SW Zemen, 42º28'N, 22º44'E, 600 m, 13.7.2006, T.Ljubomirov - ML; 1 male, 1 female, Bessaparski Hulmove hills, SE Glavinitsa vill., 42º09'N, 24º20'E, 360 m, 5.5.2007, T.Ljubomirov - ML; 1 female, Strouma valley, NE Kressna, 41º43'N, 23º09'E, 280 m, 2.6.2009, T.Ljubomirov - ML; 1 female, Pirin Mtn., E Luki vill. 41º27'N, 23º44'E, 640 m, 21.6.2009, T.Ljubomirov - ML; 8 males, 3 females, Maleshevska Planina Mtn. N Gorna Breznitsa vill., 41º44'N or 45'N, 23º06'E or 07'E, 440 m or 730 m, 8.6.2009, T.Ljubomirov - ML; 3 males, 1 female, N Lom Cherkovna vill. 43º21'N, 25º57'E, 270 m, 8.6.2010, T.Ljubomirov - ML; 1 male, S Pusstrogor vill. 41º50'12"N, 26º11'32"E, 129 m, 20.6.2012, T.Ljubomirov - MD; 1 male, 3 females, E Knyazhevo vill., 42º06'39"N, 29º31'14"E, 99 m, 24.6.2012, T.Ljubomirov - MD; 3 males, 4 females, Lozenska Planina Mtn., N Passarell vill., 42º33'12" (or 40")N, 23º29'34" (or 10"), 839 m (or 1010 m), 4.7.2013, T.Ljubomirov - MD; **Russia:** 2 females, Buryatia, Selenga - ZMM; **Kazakhstan**: 1 male, Almaty Region, Uzynagash, 6.1950, Mutnovsky - ZMM; 1 male, Alma-Ata, 8.7.1934, E.Samoylovich - ZMM; 1 female, Alma-Ata, 12.7.1945, B.Kuzin - ZMM; 2 females, Alma-Ata, 12.7.1945, B.Kuzin - ZMM; 1 female, Alma-Ata, 14.7.1945, B.Kuzin - ZMM; 1 male, Alma-Ata, 17.7.1945, B.Kuzin - ZMM; 2 females, Alma-Ata, 18.7.1945, B.Kuzin - ZMM; 6 females, Alma-Ata, 21.7.1945, B.Kuzin - ZMM; 5 males, 2 females, Alma-Ata, 12.7.1945, B.Kuzin - ZMM; 1 male, 1 female, Alma-Ata, 3.7.1946, S.Keleynikova - SM; 1 female, Alma-Ata, 1.7.1951 - MD; 1 male, Alma-Ata, 18.6.1967 S.Murzin - SM; 1 male, Urdzhar, 5.6.1935 - ZMM; 1 male, Talgar, 3.7.1951 - MD; 4 males, Karatau, Berkara, 6.6.1992, M.Danilevsky - ML;1 male, 3 females, Karatau, average flow Bayaldyr, 43º37'24.76"N, 68º31'51.03"E, 24.5.2000, M.Danilevsky - ML; **Kyrgyzstan:** 2 males, 2 females, Pishpek (Bishkek), 22.6.1935 - ZMM; 2 males, Frunze, 4.6.1943, K.Arnoldi - MD; 1 male,

Alamedin, 21.4.1943, K.Arnoldi - ML; **Uzbekistan**: 1 female, Tashkent env. - ZMM; **Turkey:** 2 males, 6 females, Turkey, Bilecik, nord of Kütahya, 27.6.1983 - ML; 3 males, Isparta - Sidre sub., 37º44'N, 30º33'E, 1320m, 13.7.2008, T.Ljubomirov - MD.

Distribution. Centre and south of West Europe from Spain to Middle Germany, South Poland and Baltic republics (Lithuania and Latvia), Moldova, West Ukraine, West Anatolia (Bilecik, Isparta). Now I do not see considerable differences between specimens from Certain Asian regions and West Europe, so I preliminary include populations of Tyumen Region, Tomsk Region, Kemerovo Region, Krasnoyarsk Region, Buryatia, mountains of South Kazakhstan, Kyrgyzstan, Uzbekistan, Tadzhikistan, Turkmenia and China (Xinjiang) in *E. f. aulicus* (Laicharting, 1784), **stat. rest.**

3. *Echinocerus floralis centaureus* **ssp. n.**

Figs. 2, 3, 6, 11.

Clytus floralis, Brullé, 1832: 255 - "Morée".

Type locality. Greece, Stomion, Mount Ossa.

Body more elongated; elytra relatively dark, with narrow black transverse strepes; pale specimens unknown; pronotum with numerous dense erect setae; abdominal sternites with narrow yellow bands along hind margin and glabrous anteriorly; abdomen often reddish.

Apex of penis exceptionally attenuated, very narrow, strongly sharpened; parameres narrow, strongly elongated, widened apically.

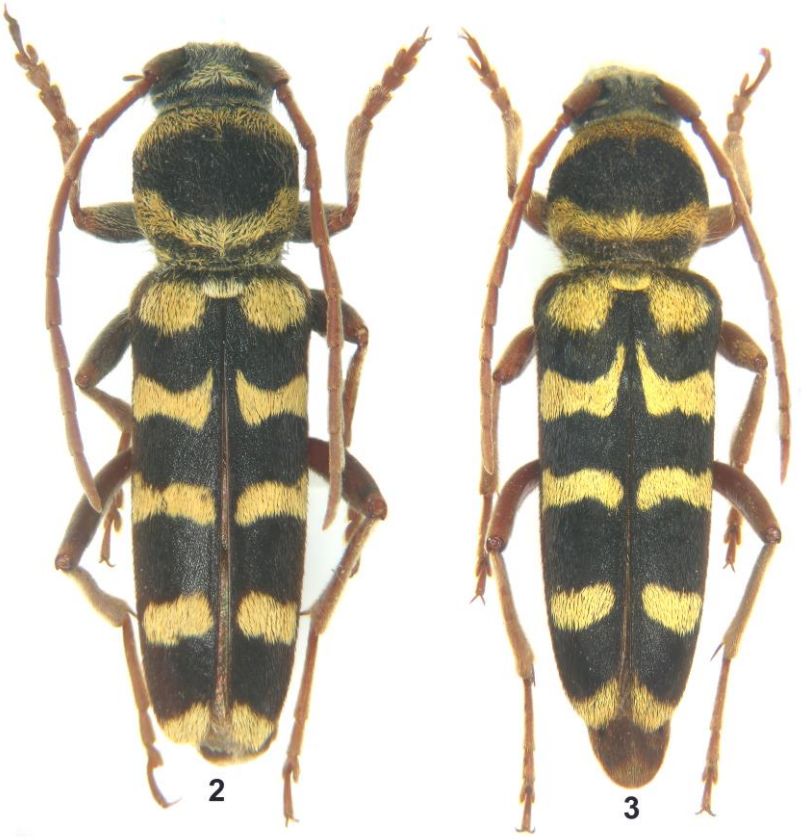
Body length in males: 10.2-13.6 mm, width: 2.8-3.8 mm; body length in females: 13.1-16.3 mm, width: 3.0-4.2 mm.

Material. Holotype, male, Greece, Ossa, Stomion, 22.6.1988, M.Slama - ML; 30 paratypes; 6 males, 1 female, with the same label - ML; 7 males, 1 female, Amfissa, 16.6.1988, M.Slama - ML; 1 female, Pieria, Pydna-Kolinoros, Kalindros Ryakia, 23.6.1988, M.Slama - ML; 2 females, Greece, Asprovalta env., Retina Castle, 40º39'24.71"N, 23º37'11.71"E, 4.7.2021, V. Gazanchidis leg. - VG; 1 male, Greece, nomas Kavala, Podochori, 40º50'36.55"N, 24º02'38.81"E, 3.5.218, V.Gazanchidis leg. - VG; 1 male, 1 female, Halkidiki, Galatista env., 40º27'21.68"N, 23º19'47.42"E, 25.5.2017, V.Gazanchidis - VG; 1 female, Greece, pref. Trikala, Kalampaka

env., 39º44'15.78"N, 21º39'19.31"E, 3.6.2018, V.Gazanchidis leg. - VG; Greece, Halkidiki, Galatista env., 25.5.2019, V.Gazanchidis leg. - VG; 3 males, 3 females, Greece, Asprovalta env., Retina Castle, 15.6.2019, V.Gazanchidis leg. -VG.

Distribution. Greece.

Etymology. The species is named after myth creatures Centaurus inhabiting Ossa Mt. - its type locality.



Figs. 2-3. *E. f. centaureus* **ssp. n.**: 2 - Holotype, male, Greece, Ossa, Stomion, 22.6.1988, M.Slama; 3 - Paratype, female, with the same label.

4. *Echinocerus floralis armeniacus* (Reitter, 1890), **stat. rest.**
Figs. 7, 12.

Plagionotus floralis v. *armeniacus* Reitter, 1890: 213 - "Kaukasus".
Clytus floralis, Pic, 1905: 392 - "Poucht-é-Kouh: Meillabandon" (Iran).
Neoplagionotus anatolicus Vartanis, 2019: 344, 346 - Turkey (prov. Antalya), Okurcalar - 30 km W of Alanya, **syn. nov.**
Clytus floralis var. *araratensis* Pic, 1901: 11 - "Mont Ararat".
Plagionotus floralis v. *clermonti* Pic, 1913: 121 - Transcaucasie.
Plagionotus floralis ab. *biinterruptus*, Pic: 1938: 14 - "Eriwan".
Echinocerus floralis anatolicus, Danilevsky, 2020: 4, 239 (status nov., comb. nov.); Özdikmen, 2021: 1304 - Turkey; 2022a: 861, 880 - Antalya province; 2022c: 1088 - "From Anatolia (Asian part of Turkey)".
Echinocerus floralis, Villiers, 1979: 115 - "Iran: Quasr-e-Shirin, à l'Ouest de Kermanshah; Patao, près de Quasr; Hatam-Bak; Hamadan; Khorramabad"; Ambrus & Grosser, 2013: 472 - "Iran, Esfahan prov., 40 km SE Aligudarz, Nowghan env., 2254 m"; Cocquempot & al., 2016: 98 - "Liban"; Kalashian & Khalatyan, 2018: 312 - Jermuk hydrological State Sanctuary (Armenia).
Plagionotus floralis, Fuchs & Breuning, 1971: 436, part. - "Anatolie: Erzincan; 20-25 km sw. Tunceli; Niksar (Tokat); Hazar Göl (Elazig)"; Şabanoğlu, 2020: 203 - "Turkey: Erzurum: Aşkale, 39°56'28"N 40°35'35"E, 1645 m; Gümüşhane: Merkez, 40°23'39"N 39°35'19"E, 1321 m; Kelkit, 40°17'17"N 39°19'34"E, 1500 m, 40°01'20"N 39°31'07"E, 1705 m".
Paraplagionotus floralis, Özdikmen, 2006: 79, part. - Turkey: Ankara, Adana, Niğde, Kayseri, İçel, Karaman, Samsun.
Plagionotus (*Echinocerus*) *floralis*, Özdikmen, Ali & Al-Hamadani, 2014: 268 - "Iraq: Erbil prov.: Topzawa; Choman, Hasarost Mt."; Özbek, Özdikmen & Aytar, 2015: 296, part - "Turkey: Adana, Içel, Kahramanmaraş, Niğde, Osmaniye".
Echinocerus floralis floralis, Özdikmen & Laz, 2022: 1032 - "Kahramanmaraş prov.: Dulkadiroğlu district, Gaziantep road 10th km, 19.V.2022, 600 m, on Althea officinalis".

Type locality. Armenia.

Body shorter; elytra with wider black transverse stripes; postbasal yellow band strongly protruding towards scutellum; pale specimens unknown; pronotum without erect setae; abdomen often reddish, sternites often totally yellow or with narrow glabrous areas anteriorly.

Apex of penis is similar to *E. f. aulicus* penis apex, but much stronger sharpened; less attenuated than in any other subspecies, and less widened posteriorly; parameres are similar to parameres of nominative subspecies, but a little thicker and shorter.

Body length in males: 8.8-14.6 mm, width: 2.2-4.2 mm; body length in females: 9.3-16.5 mm, width: 2.6-4.6 mm. Maximal size is generally accepted in many publications, but biggest available specimen - male from Armenia - 16.7 mm.

Material. Armenia: 1 male, Erivan, 1898, Korb - ZMM; 1 male, 1 female, Erivan, 13.6.1909, J.Parfentiev - ZMM; 1 male, Erivan, 14.6.1909, J.Parfentiev - ZMM;1 male, Lipovka, 25.6.1949, Viktorov - ZMM; 1 male, Kanaker, 15.7.1951, Darevsky - ZMM; 3 males, Malishka, E Mikoyan, 15.6.1956, L.Zimina - ZMM; 3 males, 25 km N Jermuk, 18.6.1956, L.Zimina - ZMM; 1 male, 1 female, Legvaz, N Megri, 7.6.1957, L.Zimina - ZMM; 1 male, Ashtarak, 8.6.1959, E.Antonova - ZMM; 3 males, 1 female, Garni, 13.6.1959, G.Viktorov - ZMM; 1 female, Jrvezh, 21.6.1959, G.Viktorov - ZMM; 1 male, Jrvezh, 24.6.1959, E.Antonova - ZMM; 1 female, Byurakan, 16.6.1959, G.Viktorov - ZMM; 2 males, 1 female, Byurakan, 29.6.1959, E.Antonova - ZMM; 1 male, Inaklyu, Byurakan env., 17.7.1959, L.Zimina - ZMM; 1 male, Byurakan, 18.7.1959, L.Zimina - ZMM; 1 male, Byurakan, 20.6.1968, A.Gambaryan - MD; 1 male, Amberd, 27.7.1982, M.Danilevsky - MD; 1 male, 2 females, Azizbekov (Vayk) 1600 m, 22.6.1986, O.Gorbunov - ML; 1 male, Megri, Kaler, 17.6.1987, Arakelyan - MD; 1 male, Khosrov, 14.8.1967, M. Danilevsky - MD; 2 males, 1 female, Khosrov, 6.7.1990, M. Kalashian - ML; 3 males, 2 females, Khosrov, 27.6.1990, M. Kalashian - ML; 2 males, 1 female, Khosrov, 25.7.1990, M.Kalashian - ML; 5 males, 3 females, Khosrov, 24.6.1992, M. Kalashian - ML; 4 males, 2 females, Khosrov, 1300 m, 15-16.6, 19.7.1986, A.Danchenko - ML; 2 males, Khosrov, 3.7.1988, O. Gorbunov - ML; 1 female, Geghard, 8.6.1989, M.Kalashian - ML. **Azerbaijan:** 1 male, Elisabethpol (Ganja), A.Wassilinin - ZMM; 1 female, Elisabethpol (Ganja), 5.1902 - ZMM; 1 male, 1 female, Margushevan, Terter river, 19.6.1933, F.Lukyanovich - ZMM; 1 male, Talysh, Gasmalyan 14.6.1975, A.Lisetsky - SM; 2 males, 1 female, Talysh, Gasmalyan, 29.6.1979, M.Danilevsky - ML; 2 males, Talysh, Gasmalyan, 9.7.1980, M.Danilevsky - ML; 2 males, Talysh, Gasmalyan, 9.6.1985, A.Danchenko - ML; 1 male, Nakhichevan, Ordubad, 29-30.5.1957, L.Zimina - ZMM; 1 male, 3 females, Nakhichevan, Arafsa, 30.6.1957, L.Zimina - ZMM; 1 male, 5 females,

Nakhichevan, Buzgov, 1500 m, 7.6.1985, M.Danilevsky - ML; 1 male, 2 females, Nakhichevan, Buzgov, 16.7.1986, A.Danchenko - ML; 2 males, 1 female, Nakhichevan, Buzgov, 1700 m, 28.6.1985, A.Danchenko - ML; 2 males, 2 females, Nakhichevan, Bichenek, 16.7.1986, V.Tuzov - SM; 1 female, Divichi, 7.VI. - ML; 3 females, Talysh, Gasmalyan, 28-30.6.1979, M.Danilevsky - MD; 1 male, Zuvand basin, 11.7.1983, A.Zvantsov - ZMM; **Georgia:** 1 male, Kodzhori, 1900, Zakharov - ZMM; 2 females, Mtskheta - ZMM; 1 female, Ortachala, 6.6.1909, J.Parfentiev - ZMM; 2 males, 1 female, Vashlovan, 28.6.1981, N.B.Korostelev - ML; 1 male, Aspindza, 2.7.1992, M.Arutunan - ML; **Turkey**: 1 female, Sarykamys, Kars, 1.7.1912, M.Poltoratski - ZMM; 1 male, 1 female, Sarykamys, 12.7.1913, M.Poltoratski - ZMM; 2 males, Sarykamys, 28.6, 1914, 9.7.1914, M.Poltoratski - ZMM; 2 females, Turkey, Adana, Pozanti, VII.1983 - ML; **Lebanon**: 1 male, Beirut, from Zhikharev - ZMM.

Distribution. Armenia, Azerbaijan, Georgie, Turkey (Adana, Kars), Iran, Iraq, Palestine.

5. *Echinocerus floralis pilifer* (Reitter, 1890), **stat. rest.**

Figs. 8, 13.

Plagionotus floralis v. *pilifer* Reitter, 1890: 213 - "Amasia".

Echinocerus floralis, Özdikmen & Tezcan, 2020: 373, part. - "Turkey: Gümüşhane, Kayseri, Konya, Mersin, Nevşehir, Niğde provinces".

Type locality. Turkey, Amasya, according to the original description.

Body relatively short; elytra with narrow black transverse stripes; postbasal yellow band hardly protruding towards scutellum; pale specimens unknown; sparse erect pronotal setae short; abdomen black with wide glabrous areas.

Apex of penis is similar to the penis apex of the nominative subspecies, but definitely narrower, less widened posteriorly; parameres are also similar to parameres of the nominative subspecies, similarly long and thin, but more parallel-sided, not thickerned at apical half.

Body length in males: 9.8-15.5 mm, width: 2.8-4.3 mm; body length in females: 10.3-11.8 mm, width: 2.5-3.5 mm.

Material. Turkey: 1 female, Amasia 1888 Korb. - ZMM; 5 males, 7 females, Amasia prov., Amasya, 425 m, 27.6.1986, S. Kadlec & J. Voříšek - ML; 4 males, 2 females, Konya prov., Akçehir, VII.1983 - ML.
Distribution. Turkey: Amasya, Konya.

Key for *Echinocerus* (Kasatkin, 2005) species:

1(6) Pronotum with dense erect setae; abdomen black.

2(5) Abdomen with glabrous black belts along anterior margin of abdominal sternites.

3(4) Erect pronotal pubescence poorly developed; apex of penis relatively narrow, moderate elongated; parameres narrow, strongly elongated, parallel-sided. *Turkey: Amasya, Konya*…….*E. f. pilifer* (Reitter, 1890), **stat. rest.**

4(3) Erect pronotal pubescence dense and long; apex of penis exceptionally attenuated, very narrow, strongly sharpened; parameres narrow, strongly elongated, widened apically. *Greece*……..*E. f. centaureus* **ssp. n.**

5(2) Abdomen usually totally covered by dense yellow pubescence; apex of penis is very similar to the nominative subspecies, but a little more sharpened and more widened posteriorly; parameres exceptionally short, rather wide, widened.
Centre and south of West Europe from Spain to Middle Germany, South Poland and Baltic republics (Lithuania and Latvia), Moldova, West Ukraine, West Anatolia (Bilecik, Isparta). Now I do not see considerable differences between specimens from Certain Asian regions and West Europe, so I preliminary include populations of Tyumen Region, Tomsk Region, Kemerovo Region, Krasnoyarsk Region, Buryatia, mountains of South Kazakhstan, Kyrgyzstan, Uzbekistan, Tadzhikistan, Turkmenia and China (Xinjiang)…….. .....*E. f. aulicus* (Laicharting, 1784), **stat. rest.**

6(1) Pronotum without dense erect setae; abdomen often reddish.

7(8) Abdomen always black, totally covered by dense yellow pubescence; elytra often with strongly reduced or diffused black design; apex of penis is less attenuated than in any other subspecies, and less widened posteriorly; parameres very narrow, strongly

elongated, parallelsided, not widened apically. *Steppe zone of Russia, Ukraine and Kazakhstan……..……E. f. floralis* (Pallas, 1773)

8(7) Abdomen often red or reddish; usually with glabrous belts along anterior margin of abdominal sternites; elytra always with contrast black design; apex of penis is similar to *E. f. aulicus*, but much stronger sharpened; less attenuated than in any other subspecies, and less widened posteriorly; parameres similar to the nominative subspecies but a little thicker and shorter. *Turkey: Adana, Ispir, Antalia, Bilechik; Armenia, Georgia, Azerbayjan, Iran……E. f. armeniacus* (Reitter, 1890), **stat. rest.**

Acknowledgement. I am very grateful to Viktor Gazanchidis (Moscow), Aleksey Gusakov (Zoological Museum of Moscow University), Mikhail Danilevsky (A.N. Severtzov Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow) and Sergey Murzin (Moscow) for supplying me with specimens for study. My special thanks to Dmitry Milko (Institute of Biology, National Academy of Sciences of Kyrgyzstan, Bishkek) for valuable geographical information.

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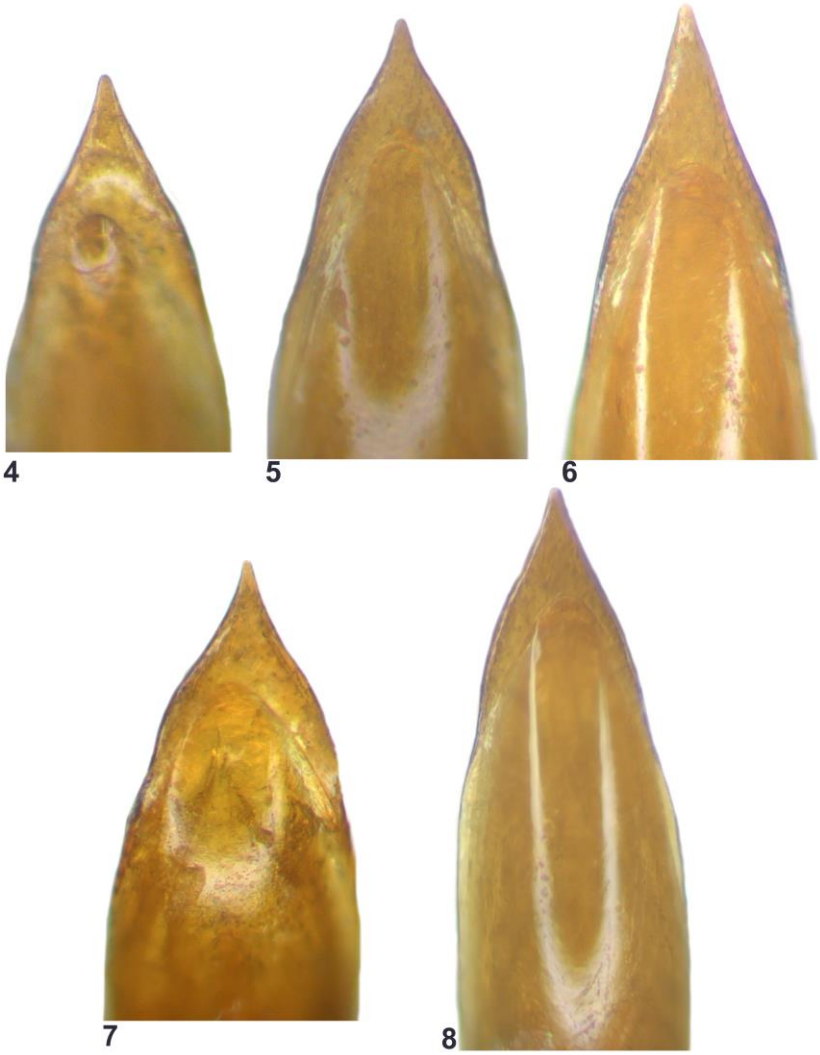

Fig. 4. *Echinocerus floralis floralis* (Pallas, 1773): Kazakhstan, Esil - apical part of penis.
Fig. 5. *E. f. aulicus* (Laicharting, 1784), **stat. rest.**: Bulgaria - idem.
Fig. 6. *E. f. centaureus* **ssp. n.**: Greece, Ossa, Stomion - idem.
Fig. 7. *E. f. armeniacus* (Reitter, 1890), **stat. rest.**: Armenia, Khosrov - idem.
Fig. 8. *E. f. pilifer* (Reitter, 1890), **stat. rest.**: Turkey, Amasia - idem.

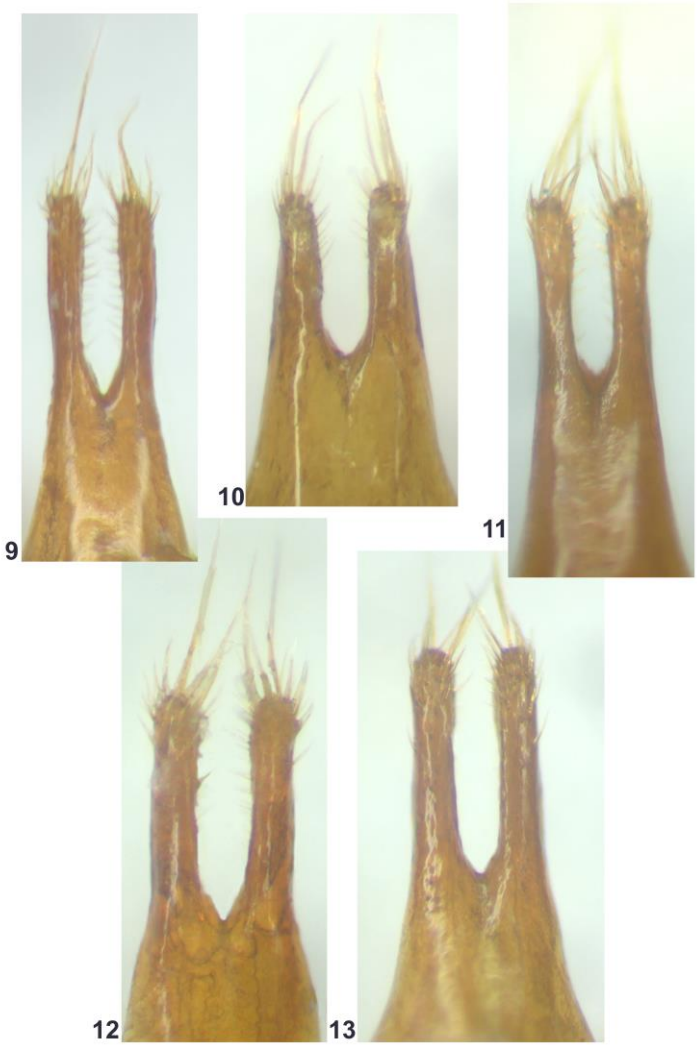

Fig. 9. *E. f. floralis* (Pallas, 1773): Kazakhstan, Esil - apical parts of tegmen.
Fig. 10. *E. f. aulicus* (Laicharting, 1784), **stat. rest.**: Bulgaria - idem.
Fig. 11. *E. f. centaureus* **ssp. n.**: Greece, Ossa, Stomion - idem.
Fig. 12. *E. f. armeniacus* (Reitter, 1890), **stat. rest.**: Armenia, Khosrov - idem.
Fig. 13. *E. f. pilifer* (Reitter, 1890), **stat. rest.**: Turkey, Amasia - idem.

Received: 10.02.2022
Accepted: 11.05.2022