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NEW SPECIES AND RECORDS OF PLUME MOTHS OF THE GENUS *AGDISTIS* HÜBNER, 1825 (LEPIDOPTERA: PTEROPHORIDAE: AGDISTINAE) FROM SOUTHERN AFRICA. 2

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[Ковтунович В.Н., Устюжанин П.Я. Новые виды пальцекрылок рода *Agdistis* Hübner, 1825 (Lepidoptera: Pterophoridae, Agdistinae) из Южной Африки. Сообщение 2]

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Ключевые слова: *Pterophoridae, Agdistinae, Agdistis, пальцекрылки, Южная Африка, новые виды.*

Summary. 5 new species of plume moths: *Agdistis kevintucki* sp.n., *A. anikini* sp. n., *A. dazdraperma* sp. n., A. *swierstri* sp. n., A. *myburgi* sp. n. are described from South Africa. The hitherto unknown female genitalia of *Agdistis arenbergeri* Gielis and *Agdistis lomholdti* Gielis are illustrated.

Резюме. Описываются пять новых видов пальцекрылок из Южной Африки: *Agdistis kevintucki* sp.n., *A. anikini* sp. n., *A. dazdraperma* sp. n., *A. swierstri* sp. n., *A. myburgi* sp. n. Для *Agdistis arenbergeri* Gielis и *Agdistis lomholdti* Gielis приводятся изображения гениталий самок, которые ранее не были известны.

The second part of our paper continues the study of South African plume moths of the genus *Agdistis* Hubner. During the field trip to South Africa (winter 2007-2008) the authors and their colleagues entomologists collected more than 500 specimens of *Agdistis.* As a result of study of this material along with the collections of Natural History Museum (BMNH, London) and Transvaal Museum (TM, Pretoria) there were about 20 species of *Agdistis* recorded. 5 species are described here as new, and hitherto unknown female genitalia of *Agdistis arenbergeri* Gielis and *Agdistis lomholdti* Gielis are illustrated. Holotypes of all new species are stored in Natural History Museum (BMNH, London) and Transvaal Museum (TM, Pretoria). Paratypes are stored in the same two Museums and in the private collections of the authors: P. Ustjuzhanin (Russia, Novosibirsk), V. Kovtunovich (Russia, Moscow).

Agdistis kevintucki sp. n. (Col. pl. II, fig. 3)

Material examined: – **Holotype**, male, BMNH, gen. pr. 21835, S. Africa Rep., Free State, 20 km W of Winburg, Erfenis Dam, S 28°29', E 26°47', 31.12.2007, leg. V.Kovtunovich & P.Ustjuzhanin. **Paratypes**: 2♀, same date as holotype; 2♀, S. Africa, Steynsburg, C.P., 11.1964, R.J. Southey; 1♂, S. Africa, Transvaal, Hakboslaagte, Lichtenburg Dist., 27-28.08.1948, H. Kinges.

External characters. Forewing length (holotype) 10.5 mm. Wingspan 20-25 mm, in holotype – 22 mm. Forewing grey with four dark dots: two in discal area and at costal margin, other two in middle part and at base of the wing. Hindwing grey without markings.

Male genitalia. Valvae symmetrical, relatively narrow, with bifurcated apices. Costal processes twice shorter than valvae, broadened to apex and ended with finger-like projection. Uncus in the shape of dual plates, each one bifurcated at apex. Sternite VIII with shallow oval-shaped incision. Aedeagus short, almost equal to valvae in length, narrowed in the middle part (Col. pl. III, fig. 3).

Female genitalia. Apophyses posteriores short and slender. Antrum long and broad, tube-like. Lamina vaginalis of sternite VII broad, concave at apex, with two slender icicle-shaped cords at the edges. Ductus short, poorly sclerotized, gradually progressing into small and narrow oval-shaped bursa copulatrix (Col. pl. III, fig. 6).

Differential diagnosis. In the male genitalia by the bifurcated apices of the valvae, by doubly forked uncus this species is unique. In the female genitalia by the shape of antrum and bursa copulatrix the new species is close to *Agdistis reciprocans* Meyrick, well differing by the shape of lamina vaginalis.

Notes. The male genitalia figured in the paper by E. Arenberger [1988] as belonging to *Agdistis pustulalis* Walker are in fact the genitalia of the new species described here. Later, E. Arenberger [2001] has correctly illustrated the genitalia of typical *Agdistis pustulalis.*

Flight period: End August – January.

Distribution: South Africa: Free State, North West and Eastern Cape.

Etymology. The species is named after Dr. Kevin Tuck, the curator of Microlepidoptera section in Natural History Museum (BMNH, London).

Agdistis anikini sp. n. (Col. pl. II, fig. 1)

Material examined: – **Holotype**, male, TM, gen. pr. 15896, S. Africa Rep., Hillmoor, Steynsburg, 23-31.12.1967, Southey. **Paratypes**: 1♀, same date as holotype.

External characters. Holotype: Forewing length (holotype) 11 mm. Wingspan 22-23 mm, holotype – 23 mm. Forewing grey with four dark dots; two in discal area and at costal margin of the wing, other two in middle part and at base of the wing. In distal part of forewing at costal margin 3 black and 3 white interlaced narrow streaks are expressed. Hindwing uniformly grey.
Male genitalia. Valvae asymmetrical. Left valva rather broad, narrowing to apex. Outer part of right valva concave and cut on the skew, its costal edge narrow and elongated. Costal processes of both valvae symmetrical, protruded beyond the middle of valvae, with a sole-like dilatation at tip. Uncus capitate, with ear-like lobes at tip. Sternite VIII with shallow oval-shaped incision, its lobes with lunate hollows at tips. Aedeagus short, slightly sinuous (Col. pl. III, fig. 1).
Female genitalia. Apophyses posteriores slender and rather long. Antrum broad and short, tube-like. Lamina vaginalis at sternite VII large and elongated, with hollow at tip; two short cords hanging at its edges. Ductus long, membranous, gradually progressing into oval-shaped bursa copulatrix (Col. pl. III, fig. 4).
Differential diagnosis. By the general morphology of male genitalia, the new species is close to *Agdistis furcata* Arenberger. The main differences are: the morphology of costal processes on both valvae; the shape of distal part of the right valva and the shape of uncus.
Flight period: December.
Distribution: South Africa: Eastern Cape.
Etymology. The species is named after professor Vasily Anikin, entomologist, our fellow traveller in South Africa in December 2007 – January 2008.

***Agdistis dazdraperma* sp. n.** (Col. pl. II, fig. 2)

Material examined: – **Holotype,** male, BMNH, gen. pr. 21837, S. Africa Rep., Northern Cape, 80 km SW of Springbok, Namaqua N.P., S 30°03', E 17°27', 11-13.01.2008, leg. V.Kovtunovich & P.Ustjuzhanin. **Paratypes**: 1♀, same date as holotype.
External characters. Holotype: Forewing length (holotype) 7 mm. Wingspan 15 mm, holotype – 15 mm. Forewing grey with four dark dots; in discal area, at costal margin, in middle part and at wing base. Hindwing uniformly grey.
Male genitalia. Valvae symmetrical, visibly narrowing from middle to acute apex. Costal processes distinctly widened from middle to apices. Uncus bifid at apex. Sternite VIII with a deep elongated incision; lobes of sternite VIII narrow, tapering to tips. Aedeagus sinuous, equal to valva in length (Col. pl. III, fig. 2).
Female genitalia. Apophyses posteriores slender and rather long. Antrum large, shaped like tapering downward tube. Lamina vaginalis of sternite VII large, sclerotized, broadly-oval with small excavation at apex; with two short finger-like cords at the edges. Ductus rather long, sclerotized, sharply progressing into small rounded bursa copulatrix (Col. pl. III, fig. 5).
Differential diagnosis. In the male genitalia, by the shape of tapering to the apices valvae slightly resembles *Agdistis criocephala* Meyrick, differing by the shape of the costal processes on both valvae, by sharply pointed valvae apices, by the shape of the uncus and sternite VIII. In the female genitalia somewhat resembles *A. dimetra* Meyrick by the shape of the antrum, but well differs from the latter with the broadly-oval shape of the lamina vaginalis of sternite VII and short finger-like cords.
Flight period: January.
Distribution. South Africa: Northern Cape.
Etymology. The species is named in memory of the Soviet holiday "Day of working-people solidarity": May 1st.

***Agdistis swierstri* sp. n.** (Col. pl. II, fig. 7)

Material examined: – **Holotype**, male, BMNH, gen. pr. 22626, S. Africa Rep., Northern Cape, 80 km SW of Springbok, Namaqua N.P., S 30°03', E 17°27', 11-13.01.2008, leg. V.Kovtunovich & P.Ustjuzhanin. **Paratypes**: 12♂, same date as holotype; 3♂, S. Africa Rep., Northern Cape, 5 km SE of Springbok, Koperberg farm, S 29°42', E 17°55', 09-10.01.2008, leg. Kovtunovich V. & Ustjuzhanin P.
External characters. Forewing length (holotype) 9 mm. Wingspan 18-20 mm, in holotype – 19.5 mm. Forewing grey with four dark dots; two in discal area and at costal margin, other two in middle part and at base of the wing. Central area light brown. Hindwing grey without markings.
Male genitalia. Valvae asymmetrical, wave-like curved. Apex of left valva with oblique concave cut. Apex of right valva rounded. Costal processes long, protruding beyond middle of valva, with large crest-like plates. The plate on left valva larger than plate on right valva. In lower part of valvae sclerotized armature starts from their bases, forming elliptical ring in basal part, continued with cord to outer edge of valva, ending before the apex of valva. Uncus oval-shaped, bifurcated at apex. Sternite VIII with deep narrow incision. Aedeagus short, with bent apex (Col. pl. IV, fig. 3).
Differential diagnosis. In the male genitalia by the shape of valvae and uncus the new species is close to *Agdistis kruegeri* Kovtunovich & Ustjuzhanin, differing from the latter with rounded apex of the right valva and the sclerotized cord in the lower part of the valva ending before the apex of the valva. In *A. kruegeri* the apex of the right valva is concave and the sclerotized cord ends at the apex of the valva.
Female genitalia. Not known.
Flight period: January.
Distribution. South Africa: Northern Cape.
Etymology. The species is named after C.J. Swierstra, one of former (1922-1946) directors of Transvaal Museum (Pretoria), who was also a collector of insects including Pterophoridae.

***Agdistis myburgi* sp. n.** (Col. pl. II, fig. 5)

Material examined: – **Holotype,** male, BMNH, gen. pr. 22624, S. Africa Rep., Northern Cape, 5 km SE of Springbok, Koperberg farm, S 29°42', E 17°55', 09-10.01.2008, leg. V.Kovtunovich & P.Ustjuzhanin. **Paratypes:** 1♂, 1♀, same date as holotype; 1♂, 1♀, S. Africa Rep., Western Cape, 10 km S of Laigsburg, 15.01.2008, leg. Ustjuzhanin P. & Kovtunovich V.; 1♂, [S. Africa], Bloemfontein, Irving, 10.1925, coll. Janse; 1♂, [S. Africa], Springbok, 9 km South of, 18-20.10.1954, A.J.T. Janse; 1♂, [S. Africa],

Pretoria, 6.10.1949, A.J.I. Janse; 1 ♀, [S. Africa], Pretoria, 07.04.1948, A.J.I. Janse. Ex. collection C. Akerman acquisition May 1976; 1♂, [S. Africa], Sterkstroom, 03.03.1948, G.C. Clark; 1♂, S. Africa Rep., E. Cape, Jouberts Pass, Ladi Grey, 23.03.1996, leg. N.J. Duke.

External characters. Forewing length (holotype) 10 mm. Wingspan 21-29 mm, in holotype – 21 mm. Forewing grey with four dark dots; two in discal area and at costal margin, other two in middle part and at base of the wing. Hindwing grey without markings.

Male genitalia. Valvae asymmetrical, wave-like curved. Short finger-like projection is on the transversal wrinkle of left valva near its middle. Costal processes on valvae long, protruding beyond middle of valva, with large crest-like plates at tops. The plate on left valva larger than plate on right valva. Right valva with deep oval incision and acute spine in central lower part. Uncus bifurcated at apex. Sternite VIII with deep V-like incision. Aedeagus almost equal to valva in length, noticeably bent in distal part (Col. pl. IV, fig. 1).

Female genitalia. Apophyses posteriores short and slender. Antrum broad, cone-like downward. Lamina vaginalis of sternite VII large, broad-oval, enclosed by two large sclerotized plates from sides. Two icicle-shaped cords with bent tips start from the edges of the plates. Ductus long, membranous, gradually progressing into oval-shaped bursa copulatrix. Ductus seminalis starts from the base of bursa copulatrix. Ductus seminalis long, narrow, ends with a little widened membranous sack (Col. pl. IV, fig. 4).

Differential diagnosis. In the male genitalia by the shape of valvae, uncus and sternite VIII the new species is close to *Agdistis kruegeri* Kovtunovich & Ustjuzhanin, differing from the latter with the shape of costal processes of both valvae. There is finger-like projection on the left valva in new species, and no such structure in *A. kruegeri.* There is spine-like projection on the right valva in *A. myburgi,* absent in *A. kruegeri.* New species differs as well with the shape of aedeagus. Female genitalia greatly resemble those of *A. karischi* Arenberher, but somewhat differ with broad, cone-like antrum, which is cylindrical and less broad in *A. karischi*. Lamina vaginalis of sternite VII in the new species is more elongated than in *A. karischi*.

Notes. Polymorphic species. The specimens in type series vary in sizes as well as in colour: from dark-grey to light-yellow.

Flight period: March-April, October-January.

Distribution. South Africa: Western and Northern Cape.

Etymology. The species is named after Mr. Maritz Myburgh (S. Africa Rep.), the farmer who kindly allowed us to collect insects in his property – Koperberg farm.

Agdistis arenbergeri Gielis, 1986 (Col. pl. II, fig. 6)

Agdistis arenbergeri: Gielis, 1986: 49; 2003: 11 (Rep. S. Africa, Bloemfontein).

Vari *et al.* 2002: 83, Kovtunovich and Ustjuzhanin, 2009: 37.

Material examined: – 17♂, 12♀, S. Africa Rep., Western Cape, 10 km S of Laigsburg, 15.01.2008, leg. P.Ustjuzhanin & V.Kovtunovich**.**

Male genitalia (Col. pl. IV, fig. 2).

Female genitalia. Apophyses posteriores short and slender. Antrum cup-shaped, widened upward, gradually narrowing to base. Lamina vaginalis of sternite VII with two straight sclerotized cords. There is small excavation on the top of lamina. Ductus short, broad, gauffered, sharply progressing into a large oval-shaped bursa copulatrix. Ductus seminalis well defined, very long, ends with a strongly widened closed sack (Col. pl. IV, fig. 5).

Distribution: Rep. S. Africa. Free State, Western Cape.

Agdistis lomholdti Gielis, 1990 (Col. pl. II, fig. 4)

Agdistis lomholdti Gielis, 1990: 114. – Namibia, Gobabeb.

Vari et al., 2002: 83; Gielis, C., 2003:13; Kovtunovich and Ustjuzhanin, 2009:39.

Material examined: – 4♂, 4♀, S. Africa Rep., Northern Cape, 80 km SW of Springbok, Namaqua N.P., S 30°03', E 17°27', 11-13.01.2008, leg. V.Kovtunovich & P.Ustjuzhanin; 25 spec. (♂ and ♀) S. Africa Rep., Western Cape, 10 km S of Laigsburg, 15.01.2008, leg. P.Ustjuzhanin & V.Kovtunovich.

Male genitalia Col. pl. II, fig. 8.

Female genitalia. Apophyses posteriores short and slender. Antrum tube-like, broad, strongly sclerotized. Lamina vaginalis at VII sternite large, sclerotized, with small excavation at the apex and with two sclerotized cords at the edges. Ductus long, membranous, progressing into oval-shaped bursa copulatrix (Col. pl. II, fig. 9).

Distribution: Rep. S. Africa (Northern and Western Cape), Namibia.

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Figs. 1-7. General view of imago: 1. *Agdistis anikini* **sp.n.**; 2. *Agdistis dazdraperma* **sp. n.**; 3. *Agdistis kevintucki* **sp. n.**; 4. *Agdistis lomholdti* Gielis, 1990; 5. *Agdistis myburgi* **sp. n.**; 6. *Agdistis arenbergeri* Gielis, 1986; 7. *Agdistis swierstri* **sp. n.** Fig. 8. *Agdistis lomholdti* Gielis, 1990, male genitalia. Fig. 9. *Agdistis lomholdti* Gielis, 1990, female genitalia.

Рис. 1-7. Общий габитус имаго: 1. *Agdistis anikini* **sp.n.**; 2. *Agdistis dazdraperma* **sp. n.**; 3. *Agdistis kevintucki* **sp. n.**; 4. *Agdistis lomholdti* Gielis, 1990; 5. *Agdistis myburgi* **sp. n.**; 6. *Agdistis arenbergeri* Gielis, 1986; 7. *Agdistis swierstri* **sp. n.** Рис. 8. *Agdistis lomholdti* Gielis, 1990, гениталии самца. Рис. 9. *Agdistis lomholdti* Gielis, 1990, гениталии самки.

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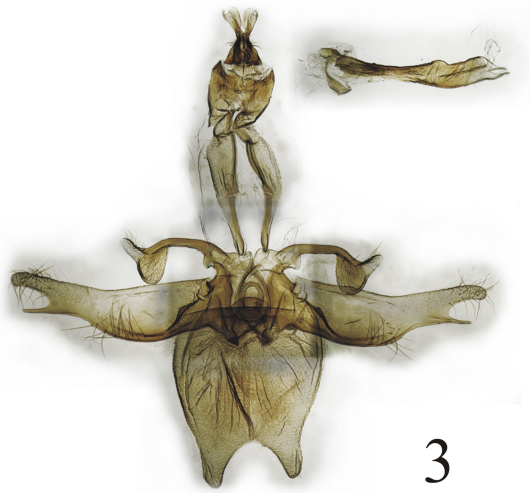

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Figs. 1-3. Male genitalia: 1. *Agdistis anikini* **sp.n.**; 2. *Agdistis dazdraperma* **sp. n.**; 3. *Agdistis kevintucki* **sp. n.** Figs. 4-6. Female genitalia: 4. *Agdistis anikini* **sp.n.**; 5. *Agdistis dazdraperma* **sp. n.**; 6. *Agdistis kevintucki* **sp. n.**
Рис. 1-3. Гениталии самцов: 1. *Agdistis anikini* **sp.n.**; 2. *Agdistis dazdraperma* **sp. n.**; 3. *Agdistis kevintucki* **sp. n.**
Рис. 4-6. Гениталии самок: 4. *Agdistis anikini* **sp.n.**; 5. *Agdistis dazdraperma* **sp. n.**; 6. *Agdistis kevintucki* **sp. n.**

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Figs. 1-3. Male genitalia: 1. *Agdistis myburgi* **sp. n.**; 2. *Agdistis arenbergeri* Gielis, 1986; 3. *Agdistis swierstri* **sp. n.**
Figs.4-5. Female genitalia: 4. *Agdistis myburgi* **sp. n.**; 5. *Agdistis arenbergeri* Gielis, 1986.
Рис. 1-3. Гениталии самцов: 1. *Agdistis myburgi* **sp. n.**; 2. *Agdistis arenbergeri* Gielis, 1986; 3. *Agdistis swierstri* **sp. n.** Рис. 4-5. Гениталии самок: 4. *Agdistis myburgi* **sp. n.**; 5. *Agdistis arenbergeri* Gielis, 1986.