

A New Key for Hungarian *Lucilia* Species (Diptera, Calliphoridae)

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Abstract — New key is given for both sexes of the 9 Hungarian *Lucilia* species, including descriptions of hitherto unknown females of *Lucilia pilosiventris* KRAMER and *L. regalis* (MEIGEN). With 5 figures.

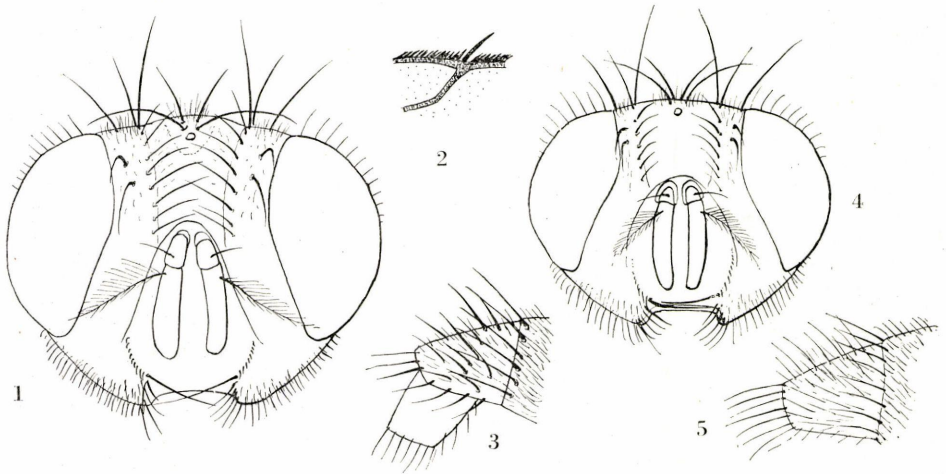
The researches in our century to clear the role of flies in the transmission of enteric diseases proved to be prominent, among the synanthropic flies especially those concerning the *Lucilia* species. Consequently, the identification of these species became indispensable. No reliable key exists owing to the insufficient knowledge of the taxonomy of this group. Three of the nine species living in most of Europe have been described in this century, and of two species the females were till now still unknown.

STEIN (1924) gave a key for the males of the 7 species, known to him. SÉGUY (1928) knew the males of all 9 species, accordingly his keys were based mainly on males, therefore even *L. caesar* cannot be reliably identified by them. It is the merit of SPENCE (1954) to clear the identity of most of the females by rearing. ZUMPT (1956) compiled in his monograph all the results known to that date, but did not know the females of the two rare species: *L. pilosiventris* KRAMER and *L. regalis* (MEIGEN), and even the other species could not be well named unless they were males. EMDEN (1954) included in his key also the females, except of the two rare ones, probably not occurring in Great Britain. GRUNIN (1970) made a key to the males only. LEHRER (1972) who gave a key also for the females did not know the females of *L. pilosiventris* and *L. regalis*.

Since the Hungarian Natural History Museum has a rich material of all *Lucilia* species I tried to find new diagnostic characters for both sexes with a view to construct a key for them. It is interesting to note that some good distinguishing characters have been overlooked until now. Thus the costal spine of *L. pilosiventris*, the striking difference in the occipital hairing of *L. ampullacea* and *L. illustris*, the strong discal bristles on the 5th tergite of *L. pilosiventris* and *L. regalis*. By completing the so far used characters with the new ones, all *Lucilia* species, if not all specimens, can surely and without great difficulty be named. Although the key is based on various characters a part of the males should always be examined for genitalia (cf. SÉGUY, ZUMPT, LEHRER, etc.) too, in order to confirm identification.

Key for the Hungarian *Lucilia* species

- 1 (16) Basicosta black or dark brown.
- 2 (3) 3 *ac* behind suture. 2 strong upright marginals in middle of third tergite. Frons of male narrow, hardly broader than ocellar triangle, 1/3–1/2 occupied by interfrontalia. Palpi brown with black tip. Surstyli of males narrow, their breadth about 1/6 of its length, tapering from middle to tip. Frons of female about 1/3 of head's breadth. —Very common in Hungary
silvarum (MEIGEN, 1826) ♀♂
- 3 (2) Usually 2 *ac* behind suture.
- 4 (5) 2 strong marginals on third tergite. Surstyli of males 1/4 as wide as its length, nearly parallel sided. Female very similar to *L. silvarum*, but



Figs. 1-3. *Lucilia pilosiventris* KRAMER ♀: 1 = head, 2 = costal spine, 3 = abdominal tergites 4-6. Fig. 4. *Lucilia regalis* (MEIGEN): female head. — Fig. 5. *Lucilia richardsi* COLLIN: female tergite 5.

has usually only 2 postsutural *ac.* (Further features: lighter brown palpi, narrower frons $1/4-1/3$ head's width, rather variable and unreliable). — Very rare in Hungary

bufonivora MONIEZ, 1876, ♀♂

5 (4) Third tergite without marginals.

6 (11) Males.

7 (8) Anal tergite conspicuously swollen, large and shining green, cerci bent backwards, surstyli bifid at apex. These marks distinguish the species from all other *Lucilia*. Frons very narrow, half as wide as third antennal joint, latter 3 times longer than wide. Cheek narrower than antenna. — Very common, mainly in forests

caesar (LINNÉ, 1758) ♂

8 (7) Anal tergite small, narrow, black or greenish.

9 (10) Head behind covered with white hairs. Third antennal joint very long, 4 times longer than wide. Surstyli short, rounded, covered with dense white hair. Frons narrower, half as wide as antenna. — Widely distributed in forests of our hills

ampullacea VILLENEUVE, 1922 ♂

10 (9) Head behind covered with short black hairs. Third antennal joint 2.5-3 times longer than wide. Surstyli long, curved forward, pointed, with an apical knob. Frons nearly as wide as antenna. — Not common, mainly in wet meadows, also in towns

illustris (MEIGEN, 1826) ♂

11 (6) Females.

12 (13) First segment of ovipositor inflated, short marginal hairs centrally and laterally separated by bare patches. Third antennal joint 3 times longer than wide

caesar (LINNÉ, 1758) ♀

- 13 (12) First segment of ovipositor in lateral view straight or even concave, marginal bristles arranged in a continuous row.
- 14 (15) Head behind covered with white hairs. Third antennal joint about 3–4 times as long as wide
ampullacea VILLENEUVE, 1922 ♀
- 15 (14) Head behind covered with black hairs. Third antennal joint 2.5, seldom 3 times longer than wide
illustris (MEIGEN, 1826) ♀
- 16 (1) Basicosta creamy white. 3 postsutural *ac.* Abdomen of males shiny, that of females covered by thin whitish dust.
- 17 (18) Only 1 *ad* bristle on mid tibia. Frons wider than third antennal joint, half of it occupied by interfrontalia. Cheeks of male of about 1.5 antennal breadth, those of females even wider and whitish grey dusted. — Very common in open fields and towns
sericata (MEIGEN, 1826) ♀♂
- 18 (17) 2–4 *ad* bristles on mid tibia.
- 19 (24) Males. Abdomen glossy, undusted.
- 20 (21) Frons narrow, hardly wider than antenna. Interfrontalia 1/3 of frons. Fifth tergite without strong discal setae (Fig. 5)
richardsi COLLIN, 1926, ♂
- 21 (20) Frons conspicuously wide, 2–4 times wider than third antennal joint. Last tergite with long, strong discal bristles (Fig. 3).
- 22 (23) Sternites covered with long, dense, brush-like hairs. Frons 4 times wider than antenna. Cheeks 1.5–2 times as wide as antenna. No marginal bristle on third tergite. Costal spine well developed (Fig. 2), over 2 times longer than spinules near them (often broken on one or both sides). Our largest *Lucilia* species, 7–12 mm. — Collected in small numbers mainly on plains. ZUMPT (1956) supposes, that *L. pilosa* BARANOV, 1926 may be identical with this species
pilosiventris KRAMER, 1910, ♂
- 23 (22) Sternites with the usual hairs. Frons 2 times wider than antenna. Cheeks 1.25 times as wide as antenna. 2–4 long marginal bristle on third tergite. Costal spine short, hardly longer than spinules. Smaller, 6–7 mm. — Rare in Hungary, occurs mainly on meadows of plains
regalis (MEIGEN, 1826) ♂
- 24 (19) Females. Abdomen thinly, uniformly white dusted.
- 25 (26) Large, 8–10 mm in length. Costal spine conspicuously long (Fig. 2). Cheeks silvery white gleaming, nearly 2 times as wide as antenna. Interfrontalia as wide as one of the parafrontalia. 2–3 *ad* on mid tibia nearly equally strong. Discal bristles on fifth tergite strong and numerous (Fig. 3). Brush-like hairs on sternites much less developed than on males
pilosiventris KRAMER, 1910, ♀ *nova*
- 26 (25) Smaller flies, usually under 8 mm. Costal spine inconspicuous, hardly longer than spinules. Proximal *ad* bristles on mid tibia much shorter than distal one.
- 27 (28) Last tergite with strong discal bristles (cf. Fig. 3). Third tergite bearing 2–4 long marginal bristles, latter reaching well over middle of next tergite. Parafrontalia rather narrow (Fig. 4).
regalis (MEIGEN, 1826) ♀ *nova*

- 28 (27) Last tergite without strong discals, only long hairs (Fig. 5). Marginal bristles of third tergite not reaching middle of next tergite. Interfrontalia 2 times as broad as either orbit

richardsi COLLIN, 1926 ♀

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