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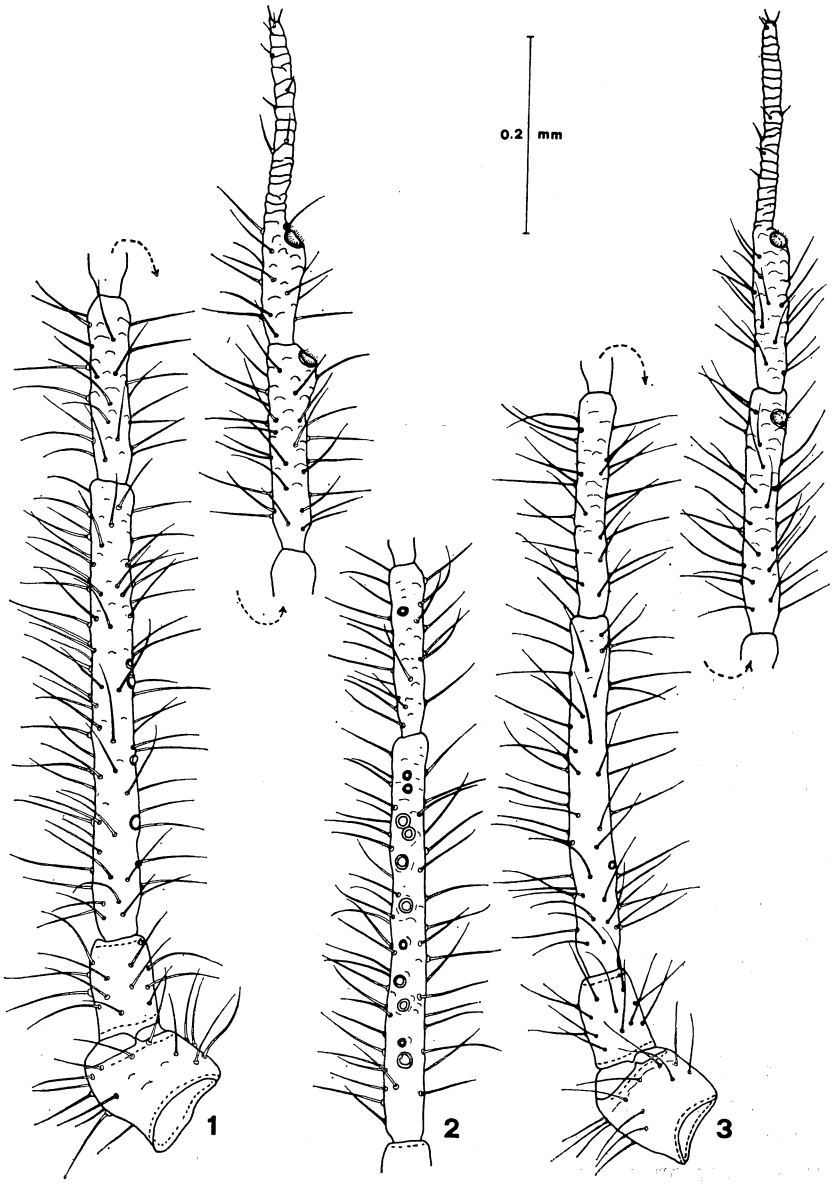
A new species of *Pterocomma* Buckton from Italy (*Homoptera, Aphidoidea*)

Pterocomma italicum sp. n.

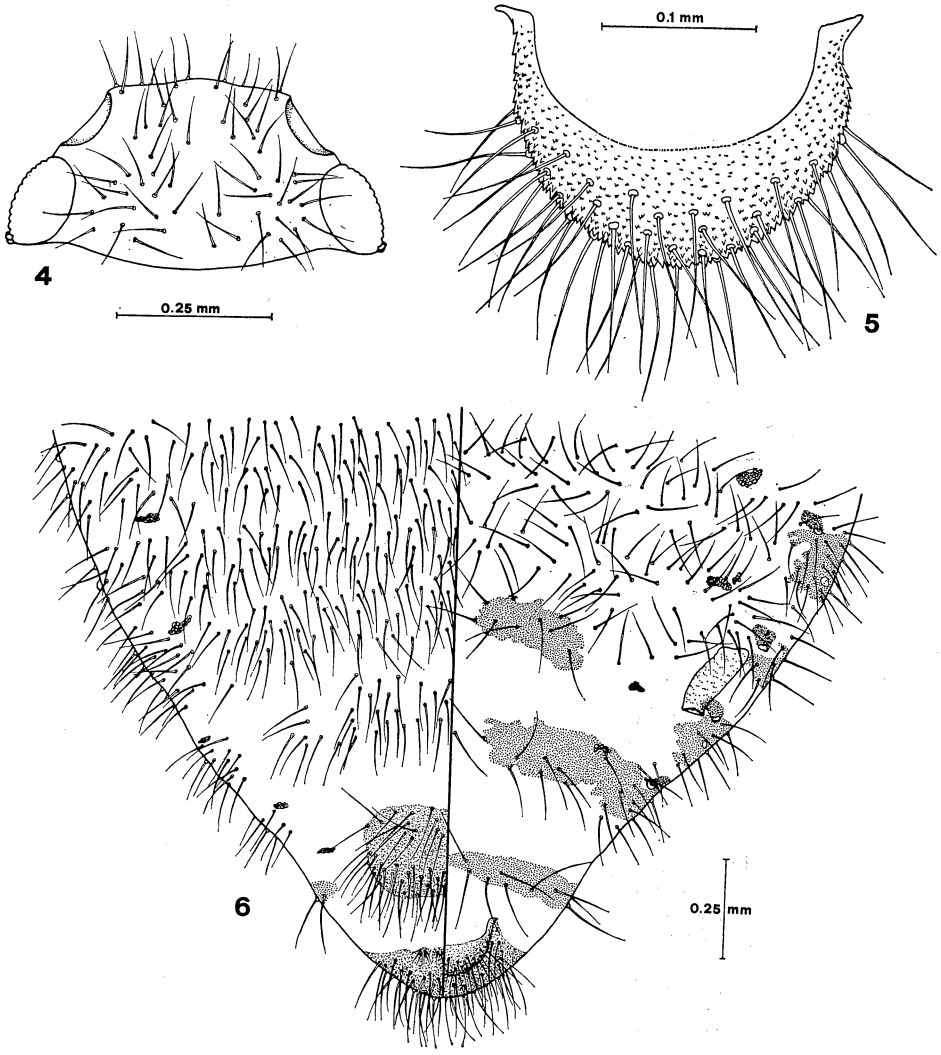
I. Morphological description.

Apterous viviparous female.

Body length 2.3-3.4 mm. Antennae 6-jointed, flagellar joints (III-VI inclusive) together 0.88-1.27 mm long, or 0.34-0.51 times body length. Processus terminalis 1.2-1.9 times as long as basal part of joint VI. Secondary rhinaria nearly always present on joint III at least on one side, 0-7 in number. Antennal hairs numerous, suberect, fine and acute, those on joint III maximally 0.066-0.109 mm long, 2.4-3.3 times as long as basal articular diameter of joint, or 1.4-2.1 times diameter of joint distal to the basal articular constriction. Number of hairs on antennal joint I 13-27, on II 8-18, on III 52-91, on IV 17-41, on V 14-37, on basal part of VI 7-21. Pigmentation of antennae rather uniformly dark sclerotic, but joint III slightly paler than succeeding joints. Frons slightly convex, width between antennal bases 0.25-0.34 mm. Dorsal chaetotaxy of head and body consisting of confusedly arranged long, fine and acute hairs in multiple rows across the tergites. Maximal length of hairs on abdominal tergite 3 0.071-0.113 mm, of those on tergite 8 0.091-0.124 mm. Total number of spinopleural hairs on abdominal tergite 7 (i.e. those lying internal to the pleural intersegmental muscle sclerites) 10-34, total number of marginal hairs on this tergite (both sides together) 25-62. Hair number on abdominal tergite 8 17-27. Dorsal sclerotic pattern of abdomen not extensive, consisting only of small, irregularly shaped and often broken marginal sclerites on tergites 1-7; a small irregular or broken pair of spinopleural sclerites on tergite 6, which may be reduced nearly to vanishing point in some specimens; a somewhat larger pair on tergite

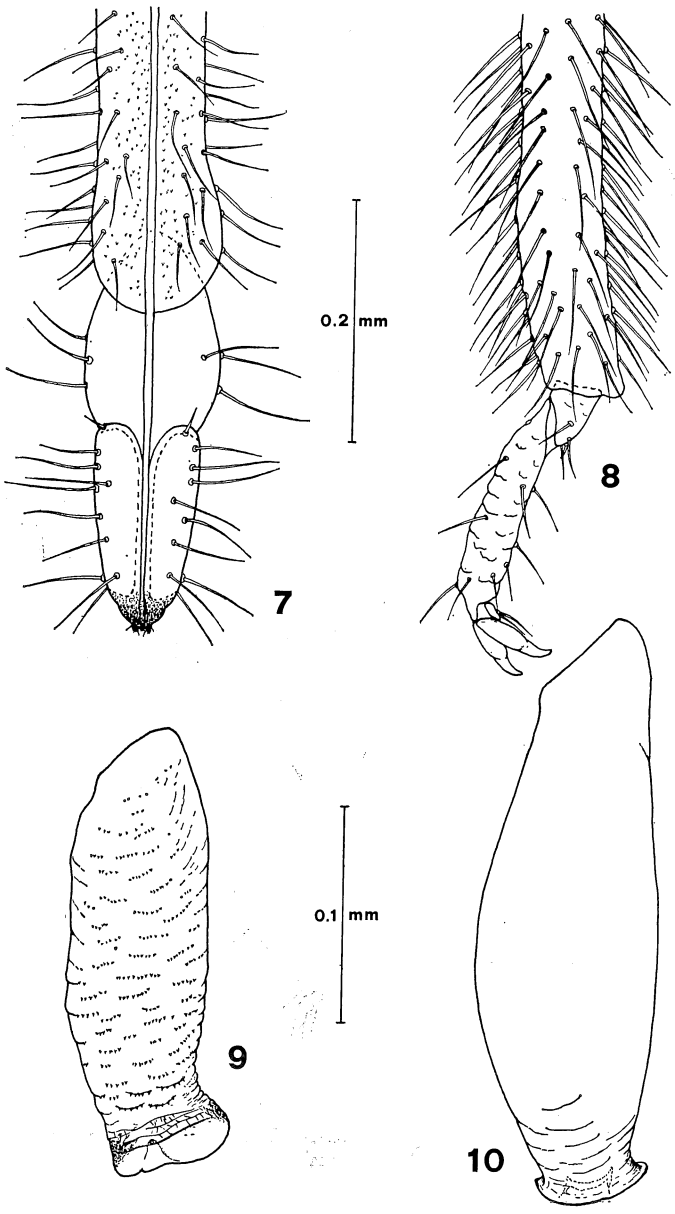


FIGS. 1-3 - *Pterocomma italicum* sp. n., apterous viviparous female. Antenna (1); alate viviparous female, antennal joints III-IV (2). *Pterocomma jacksoni* Theob., apterous viviparous female. Antenna (3). (All figures to same scale.)



FIGS. 4-6 - *Pterocomma italicum,* sp. n., apterous viviparous female. Head (4); cauda (5); posterior segments of abdomen (left side ventral, right side dorsal view) (6). (Figures to differing scales, as indicated.)

7 which in most specimens extend laterally to meet the marginal sclerites; a medially interrupted band across tergite 8; and small pleural intersegmental muscle sclerites. Marginal tubercles variably developed and represented on some or all tergites from pronotum to abdominal tergite 6



FIGS. 7-10 - *Pterocomma italicum* sp. n., apterous viviparous female. Distal segments of rostrum (7); distal part of hind tibia, and hind tarsus (8); siphunculus (9). *Pterocomma jacksoni* Theob., apterous viviparous female. Siphunculus (10). (Figs. 7-8 and 9-10 same scales within each pair of figures.)

inclusive; flat, slightly convex or strongly protuberant, and if the last then rounded, subconical or subcylindrical; specimens taken in May in northern Italy have more, and more protuberant, tubercles than those taken in September in southern Italy. Those on the pronotum may in a few specimens be subdivided into 2-3 small ones. Siphunculi rather flask-shaped, with a dilated but flangeless operculum; their greatest diameter about at, or a little before, the middle of their length; rather evenly but sparsely imbricate, the imbrications bearing rows of very small fine denticles. May and June specimens have siphunculi 0.06-0.08 times body length, September specimens 0.07-0.10 times body length. Cauda rounded, broader than long, somewhat more than half a circle in outline, 0.12-0.16 mm long, with about 30-65 hairs, which are usually extremely difficult to count accurately. Rostrum 0.85-1.09 mm long; apical segment stout, blunt, 0.159-0.192 mm long, or 0.85-1.06 times as long as hind tarsal joint II measured without claws; bearing 6-14 subsidiary hairs in addition to the 3 constant apical pairs and the very short pair at extreme base of segment. Legs stout, rather uniformly dark sclerotic or with apical half of femora and tibiae obscurely darker than remainder; hairs fine, acute and stiffly semi-erect, those on hind tibia distributed at a density of more than 300 per mm length. First tarsal joints with 5 hairs on all legs. Subgenital plate with 13-38 hairs scattered on discal area, and a multiple series of 31-51 round posterior margin.

Colour in life very dark brown dorsally, reddish brown ventrally; ventral surface rather evenly clothed with a light wax pulverulence; dorsum with a median longitudinal white wax line crossed by 2 transverse white wax bands on about abdominal tergites 1 and 5 (the latter just in front of siphunculi). Siphunculi ochreous yellow. The general appearance in life is that of a small *Pterocomma salicis* (L.) or of *P. jacksoni* Theobald.

For biometric data of specimens see Table 1.

Alate viviparous female (from 3 specimens).

Body length 2.6-3.2 mm. Antennae 6-jointed, flagellar joints together 0.39-4.48 times body length. Processus terminalis 1.6-1.8 times as long as basal part of joint VI. Secondary rhinarial numbers on antennal joints: III 10-13, IV 0-1, V 0; those on III distributed over nearly the whole length of the joint, and arranged more or less in a single row; varying in size from 0.20 to 0.44 times diameter of joint. Head and thorax wholly sclerotic; abdominal sclerotisation very similar to that of apterous vivipara, and subject to the same variation in density of pigmentation.

Abdominal marginal tubercles constantly present on segments 1-4; occasionally present (but then often only on one side) on segments 5-6. Siphunculi 0.16-0.20 mm long, 0.05-0.06 times body length. Apical rostral segment 0.92-0.98 times as long as hind tarsus II measured without claws. Forewings normal, about 2.25 times as long as hind tibiae, and with vein M twice forked. Chaetotaxy and other morphological characters more or less as in apterous vivipara.

Colour in life as for aptera, with head and thorax blackish; wings hyaline, with venation and pterostigma brown.

For biometric data of specimens see Table 1.

II. Biology.

The first Italian collection of *P. italicum* was made by H.L.G.S. from twigs of a very small-leaved *Salix,* with pinkish young twigs and leaves glaucous beneath, growing by a pile of small road metal on a road verge near Ampezzo (Udine), on 28 May 1969. The host was suspected to have some *Salix purpurea* ancestry, but the very small leaves also suggested some affinity with *S. repens.* However, the leaves were not silky pubescent beneath, and since subsequent collections made in southern Italy by S. B. were found on *Salix purpurea* it seems probable that the aphids are indeed associated with willows having at least partial *S. purpurea* parentage. The colony at Ampezzo, and that found in September in southern Italy, both lived fully exposed on the ascending twigs of the host; but the rather few specimens collected in June in the south, perhaps because of the drier atmospheric conditions, lived in a more concealed manner on the lower parts of *S. purpurea* growing in a stream bed, almost at the water surface and among surrounding herbage. Ants attended both populations. The only alatae yet collected occurred in June, and in this month the colonies found were heavily parasitised by the Aphidiid *Aphidius cingulatus* Ruthe.

III. Distribution.

Pterocomma italicum is at present known only from mountainous districts of Italy and Switzerland.

Italy: Ampezzo (Udine), Abriola (Potenza);
Switzerland: Airolo (Ticino) (D. Hille Ris Lambers leg.).

TABLE 1. Biometric data for viv

Body length	Ant. flag.	Joint ratios (III-VI)	Siph. length	Cauda		Rostral length		Subs. hairs	H. tars. II lgth	Sec. rhinaria on	
				length	bas. w.	Total	Ap. seg.			III	IV
3.16	1.20	56:27:27:17+26	0.20	0.15	0.23	1.09	0.188	12	0.204	4/2	0
2.92	1.17	54:25:26:17+27	0.18	0.12	0.19	1.03	0.176	14	0.192	4/5	0
3.04	1.24	59:25:28:16+29	0.21	0.14	0.22	1.04	0.176	12	0.208	4/4	0
2.86	1.25	60:27:27:15+28	0.21	0.13	0.22	1.02	0.176	11	0.200	7/5	0
2.87	1.14	52:23:26:17+26	0.19	0.16	0.23	1.02	0.192	12	0.196	1/2	0
2.78	1.21	58:25:27:17+29	0.22	0.15	0.22	0.93	0.184	11	0.200	5/5	0
2.42	1.18	60:23:24:16+27	0.24	0.14	0.22	0.99	0.172	11	0.196	2/2	0
2.67	1.17	90:38:39:27+40	0.19	0.16	0.24	0.92	0.175	14	0.179	4/2	0
3.21	1.23	100:34:41:25+46	0.23	0.16	0.25	1.02	0.175	10	0.184	3/5	0
2.56	0.93	72:33:30:18+32	0.17	0.13	0.21	0.85	0.159	9	0.153	1/0	0
2.50	0.97	74:32:32:22+33	0.18	0.14	0.22	0.85	0.160	9	0.159	3/0	0
2.56	1.03	77:35:37:24+33	0.20	0.14	0.21	0.86	0.163	9	0.175	6/6	0
2.31	0.89	72:26:30:20+30	0.18	0.13	0.19	0.85	0.151	6	0.159	2/4	0
2.43	0.95	77:28:32:21+32	0.17	0.13	0.21	0.85	0.165	9	0.159	7/3	0
3.04	1.04	81:36:34:25+31	0.22	0.16	0.23	0.97	0.184	9?	0.175	6/4	0
3.23	1.38	62:32:30:18+30	0.20	0.16	0.23	c. 1.03	0.184	13	0.200	10/11	0
3.02	1.18	54:25:25:16+27	0.16	0.14	0.20	c. 1.07	0.176	9	0.180	11/10	0/1
2.65	1.27	59:29:26:16+29	0.16	0.15	0.21	1.00	0.176	11	0.180	13/13	0

Collection data: Nos 1-5, apterous viviparous females, *Salix purpurea,* Abriola (Pz.), 13 June 1977; nos. 6-9, ditto b 30 September 1976; nos. 10-14, ditto, *Salix* sp., Ampezzo (Ud.), 28 May 1969; no. 15, ditto, *Salix* sp., Airolo (Tic 22 May 1950; nos. 16-18, alate viviparous females, data as for nos. 1-5. No. 1 is the holotype: the remaind except no. 15, paratypes.

Abbreviations: Ant. flag., antennal flagellum; Siph., siphuncular; bas.w., basal width; Ap. seg., apical segment; Sub subsidiary (of hairs on apical rostral segment); H. tars. II lgth., length of hind tarsus joint II without claws; HL/I maximal hair length on antennal joint III; HL/3T, ditto on abdominal tergite 3; HL/8T, ditto on abdominal tergite

* joint deformed and chaetotaxy too abnormal to be of value.

ıe of *Pterocomma italicum*, sp. n.

HL/III (µm)	HL/3T (µm)	HL/8T (µm)	Hair numbers on:								
			Ant. I	II	III	IV	V	VI (b)	Abd. 7T marg.	sp-pl.	Abd. 8T
86	98	118	27/20	13/13	75/71	35/31	31/35	15/13	20/20	7/8	20
78	91	107	22/23	13/13	73/74	32/25	29/27	12/15	13/15	7/9	22
94	94	107	21/23	14/14	86/76	34/35	34/35	16/13	22/20	7/10	27
87	92	125	21/ ?	14/12	76/68	37/29	33/31	14/14	18/17	10/8	23
79	95	107	27/ ?	16/15	77/76	33/27	29/34	16/18	16/21	6/7	20
88	82	110	22/21	17/16	80/75	27/33	31/35	18/16	25/20	6/6	23?
71	79	105	22/18	14/16	65/67	25/24	27/26	17/15	18/22	7/6	21
91	101	98	23/20	16/16	90/84	32/31?	30?/34	16/18	15/20	5/7	23
91	89	116	26/22	14/16	84/79	30/19	32/30	15/18	24/21	8/8	26
89	91	107	18/14	10/12	60/53	23/20	16/13?	8/9	18/21	12/11	20
89	100	122	14/19	14/13	64/58	26?/23	22/21	13/13	23/22	15/14	26
93	97	117	23/19	17/17	57/57	32/ *	29/24	13/16	26/25	15/17	26
85	84	111	14/16	10/12	62/62	19/18	24/25	11/9	15/20	11/10	25
89	85	112	18/16	12/8	62/65	22/17	20/21	11/10?	18/17	14/10	20
91	113	116	14/14?	13/11	55/57?	27/22?	20/20	7/8	30/32	16/18	26
79	100	108	21/ ?	15/15	75/76	46/45	38/39	16/16	12/13	7/9	19
79	80	102	14/13	9/9	57/62	27/29	27/28	14/16	9/9	6/6	19
79	87	110	16/18	9/11	73/70	37/30	25/32	16/17	9/13	6/6	18

Ant. I, II etc., antennal joints I, II etc.; VI(b), basal part of antennal joint VI; Abd. 7T marg., marginal hairs on abdominal tergite 7; sp-pl., spinopleural hairs (on tergite 7); Abd. 8T, abdominal tergite 8 (hair number on). All length measurements are given in millimetres, except those of the greatest hair lengths, which are in micrometres (microns or µm). The flagellar joint ratios of specimens 1-7 and 16-18 are cited in different arbitrary units from those of specimens 8-15.

Figures quoted for the number of hairs on individual antennal joints are given to the maximum practicable degree of accuracy, but in some instances are approximate owing to superposition of legs or other parts of the body in the slides concerned.

IV. Taxonomy.

Pterocomma italicum bears a close resemblance to *P. jacksoni* Theobald, to which it may run in keys on account of the regular presence of secondary rhinaria on antennal joint III in apterae, the rather numerous hairs on antennal joints I-II and the characteristic *P. salicis*-like colour pattern when alive. However, the species differs from *P. jacksoni* by the structure and sculpture of the flangeless, denticulately imbricate siphunculi and by a slightly greater average length of the processus terminalis if material from comparable months of the year is considered. The two species can be keyed as follows:

1 (2) Siphunculi vasiform, their greatest width a little beyond the middle of their length, and with a distinct though rather delicate flange round the operculum, this flange being easily obscured or destroyed when mounted specimens are flattened or excessively macerated in KOH. Swollen part of siphunculus with reduced imbrication, and imbrications throughout showing no trace of denticles (fig. 10). Processus terminalis in May apterae 0.8-1.3, in June to October apterae 1.25-1.65 times as long as basal part of antennal joint VI. On *Salix caprea* L., *S. aurita* L., *S. cinerea* L. and *S. repens* L.

..... **jacksoni** Theobald.

2 (1) Siphunculi flask-shaped, their greatest width about at or just before the middle of their length, and with virtually flangeless operculum. Imbrications rather evenly distributed over whole of siphunculus, and bearing small fine denticles (fig. 9). Processus terminalis in May apterae 1.2-1.8, in June and September apterae 1.5-1.9 times as long as basal part of antennal joint VI. On *Salix purpurea* L. (and hybrids containing *purpurea* genes?).

..... **italicum**, sp. n.

V. Type material.

Holotype: apterous viviparous female, *Salix purpurea* L., Abriola (Potenza), 13 June 1977 (S. Barbagallo leg.); now in collection of H.L.G.S., Plant Pathology Laboratory, Harpenden, England.

Paratypes: 14 apterous viviparous females and 3 alate viviparous females, same data as holotype; 30 apterous viviparous females, *S. purpurea,* Abriola, 30 September 1976 (S.B. leg.); 22 apterous viviparous females, *Salix* sp. (hybrid?), Ampezzo (Udine), 28 May 1969 (H. L. G. STROYAN leg.). Paratypes of all samples are divided between the collections of the authors, and apterous paratypes have been deposited also in the collections of the British Museum (Natural History), London, England; Dr D. Hille Ris Lambers, Bennekom, Netherlands; and Prof. H. Szelegiewicz, Warsaw, Poland.

VI. ACKNOWLEDGMENTS.

We express our thanks to Drs V.F. Eastop and D. Hille Ris Lambers for access to and the loan of additional material of *Pterocomma jacksoni* Theobald, and to the latter for the loan of the single Swiss collection of *P. italicum.* We also thank Prof. E. Tremblay, Istituto di Entomologia Agraria, Portici (Napoli) for determining the parasite *Aphidius cingulatus.*

VII. RIASSUNTO.

Una nuova specie di *Pterocomma* Buckton in Italia (Homoptera, Aphidoidea).

Viene descritta una nuova specie di Afide Pterocommatino, *Pterocomma italicum* sp.n., vivente su *Salix purpurea* L. e probabilmente anche su altre forme affini di Salice.

La nuova specie risulta tassinomicamente affine a *Pterocomma jacksoni* Theobald, dal quale si differenzia principalmente per la diversa forma dei sifoni e la maggiore lunghezza del processo distale del sesto antennomero.

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