

APPENDIX I.—BÖTTCHER'S TABLE OF THE PALEARCTIC SPECIES OF *SARCOPHAGA* RE-CAST DICHOTOMOUSLY.

1. Frontals not noticeably diverging, almost parallel in ♂, absolutely so in ♀.	<i>haematodes</i> , Meig.	
Frontals diverging anteriorly more or less ..		2
2. Venation normal, first posterior cell open ..		3
First posterior cell closed, short petiolate ..		85
3. Mid femora with yellow hair tuft ..		4
Mid femora without yellow hair tuft ..		5
4. Hair tuft on anterior side. A pair of pre-sutural acrostichals	<i>sinuata</i> , Meig.	
Hair tuft on posterior side. Acrostichals prescutellar only	<i>excuticulata</i> , Pand.	
5. Three posterior dorso-centrals		6
Four posterior dorso-centrals, both anterior always weak, at times rudimentary		64
Four to five posterior dorso-centrals		81
6. GS2 usually black, normal sized species ..		7
GS2 usually red, very large species		26
7. Superior claspers short and broad, posteriorly granulate, the apical third bristly in profile.	<i>granulata</i> , Kram.	
Superior claspers not so formed ..		8
8. Superior claspers with fore margin evenly curved to tip		9
Superior claspers with fore margin incised pre-apically, forming a sharp end point ..		16
9. Fifth sternite with strong bristles on lamellar margins, genital segments prominent ..		10
Fifth sternite without such bristles, genital segments not prominent		14
10. Frons exceeding $\frac{1}{2}$ eye. Hind femora with lower macrochaetal row		11
Frons not exceeding $\frac{1}{2}$ eye. Lower macrochaetal row of hind femora weak or absent		12
11. Abdominal pattern with smaller, sharper spots, not shifting in changing view. Face whitish	<i>maculata</i> , Meig.	
Abdominal pattern normal. Face yellow ..	<i>melanura</i> , Meig.	
12. Second abdominal segment with long, outstanding marginals	<i>rosellei</i> , Bött.	
Second abdominal segment without marginals ..		13
13. 3rd. antennal joint $1\frac{1}{2}$ times 2nd. Mid tibiae bare in small specimens, an apical fringe in large.	<i>noverca</i> , Rond.	
3rd antennal joint 2ce. 2nd. Mid tibiae always fringed	<i>hirticrus</i> , Pand.	
14. Frons narrow, $\frac{1}{3}$ — $\frac{2}{5}$ eye. Mid femora with comb	<i>agnata</i> , Rond.	
Frons broad, $\frac{1}{2}$ eye or more. Mid femora without normal comb		15
15. 3rd antennal joint $1\frac{1}{2}$ times 2nd. Second abdominal segment with marginals	<i>crassimargo</i> , Pand.	
3rd antennal joint 2ce. 2nd. Abdomen bare ..	<i>laciniata</i> , Pand.	
16. Superior claspers with posterior margin evenly rounded		17
Superior claspers with pre-apical hump on posterior edge		24
17. Frons narrow, $\frac{2}{3}$ an eye	<i>clathrata</i> , Meig.	
Frons broader, $\frac{1}{2}$ eye or more		18
18. Vein I bristly	<i>setipennis</i> , Rond.	
Vein I bare		19
19. Hind tibiae strongly fringed		20
Hind tibiae bare, or at most with isolated hairs on inside		22
20. Hind tibiae fringed on inside only, but strongly	<i>nemoralis</i> , Kram.	
Hind tibiae double fringed		21

21. Presutural acrostichals scarcely present. Longer hairs of hind tibiae weak and wide spaced ..	<i>discifera</i> , Kram.	
Presutural acrostichals distinct, prescutellars scarcely distinguishable. Hind tibiae, except in very small specimens, thick and long fringed on both sides	<i>soror</i> , Rond.	
22. Frons $\frac{2}{3}$ an eye. Hind tibiae bare. Palpi relatively thin. Penis without very long end prong	<i>nigriventris</i> , Meig.	23
Frons $\frac{1}{2}$ eye. Penis with long end prong ..		
23. Hind tibiae with a few long hairs. Penis anteriorly with horn-like, bent process	<i>villeneuvei</i> , Bött.	
Hind tibiae bare. Palpi relatively stout. Penis with two thin, bent apophyses	<i>rostrata</i> , Pand.	
24. Mid femora without typical comb. Hind tibiae bare. Point of superior claspers in the middle of the transversely truncate ending ..	<i>spinosa</i> , Villen.	
Mid femora with typical comb. Hind tibiae thickly double fringed. Point of superior claspers towards ventral margin		25
25. Colour normal yellow-grey. Second abdominal bare or with weak marginals	<i>striata</i> , Meig.	
Colour whitish or slaty grey. Second abdominal usually with strong marginals	<i>corsicana</i> , Villen.	
26. Superior claspers posteriorly with hump or tooth, bearing hair tuft		27
Superior claspers not so formed		32
27. Mid femora with comb	<i>uncicurva</i> , Pand.	
Mid femora without comb		28
28. Hind femora without distinct lower macrochaetal row		29
Hind femora with distinct lower macrochaetal row		31
29. Vein I bare. Scutellum near apex with pair of strong, posteriorly directed macrochaetae on hind margin	<i>cucullans</i> , Pand.	
Vein I bristly. Scutellar pre-apicals normal on disc, apicals present or absent		30
30. Lateral verticals weak or absent. Scutellar apicals present	<i>amita</i> , Rond.	
Lateral verticals strong. Scutellar apicals absent	<i>balanina</i> , Pand.	
31. Vein I bare	<i>filia</i> , Pand.	
Vein I bristly	<i>ferox</i> , Villen.	
32. Superior claspers incised on fore margin pre-apically	<i>siciliensis</i> , Bött.	
Superior claspers not so incised		33
33. Penis straight, round capped, anteriorly with two crossed processes		34
Penis otherwise formed		35
34. Superior claspers quite straight, narrow ..	<i>arcipes</i> , Pand.	
Superior claspers apically bent ventrally, broader	<i>pumila</i> , Meig.	
35. Penis curved forwards, the end-piece stout ..		36
Penis otherwise formed		38
36. Penis with large lateral process at end of mid piece	<i>fertoni</i> , Villen.	
Penis with only very short processes at distal end of side flaps		37
37. Colour pattern normal. Vein I bristly ..	<i>infixa</i> , Villen.	
Grey with ashy reflections, posteriorly shining blackish-blue. Vein I bare	<i>tricolor</i> , Villen.	
38. Scutellar apicals wanting		39
Scutellar apicals present		43
39. Vein I bare. Penis without lappet-like side processes distally	<i>böttcheri</i> , Villen.	
Vein I bare. Penis with lappet-like side processes distally		40
40. Penis with lappet-like side process only ..		41
Penis with hook-like as well as lappet-like process		42

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| 41. Superior claspers shorter, slightly bent ventrally,
and with a slight posterior swelling .. | <i>setinervis</i> , Rond. | |
| Superior claspers narrow, quite straight .. | <i>setinervis</i> , Rond.
var. <i>mutila</i> , Vill. | |
| 42. End piece of superior claspers short .. | <i>offuscata</i> , Sch. | |
| End piece of superior claspers lengthened .. | <i>offuscata</i> , Sch. var.
<i>haemorrhoides</i> , Bött. | |
| 43. Superior claspers with anterior margin quite
straight, posterior margin with hump .. | | 44 |
| Superior claspers with anterior margin curved
ventrally | | 45 |
| 44. No lateral verticals. No distinct presutural acrosti-
chals. Second abdominal with long marginals | <i>haemorrhoea</i> , Meig. | |
| Lateral verticals present. Some distinct presutural
acrostichals. Second abdominal without
marginals | <i>bezziana</i> , Bött. | |
| 45. Penis with minute, triangular end-piece, much
shorter than distal hook of mid-piece .. | | 46 |
| Penis with end piece at least as long as distal hook
of mid-piece | | 56 |
| 46. Frons narrow, not exceeding $\frac{1}{2}$ eye .. | | 47 |
| Frons broader, $\frac{3}{5}$ — $\frac{2}{3}$ eye-breadth .. | | 55 |
| 47. Frons extraordinarily narrow, not exceeding $\frac{1}{4}$ eye | | 48 |
| Frons normally narrow, $\frac{2}{3}$ an eye or more .. | | 49 |
| 48. Anterior claspers long, thin, pointed .. | <i>schnabli</i> , Villen. | |
| Anterior claspers sinuate, broad at apex .. | <i>rondanii</i> , Bött. | |
| 49. Anterior hook on mid-piece of penis very long, up-
curved. Superior claspers bristly proximally | <i>kertészi</i> , Villen. | |
| Anterior hook on mid piece of penis normally long.
Superior claspers not bristled | | 50 |
| 50. Superior claspers broad, apically rounded, tip
very obtuse | <i>schineri</i> , Bezzi. | |
| Superior claspers narrowed and pointed apically | | 51 |
| 51. Vibrissae somewhat above clypeal margin .. | | 52 |
| Vibrissae exactly at clypeal margin .. | | 53 |
| 52. Superior claspers short, preapically transversely
truncate | <i>benaci</i> , Bött. | |
| Superior claspers longer, almost straight, much
less suddenly narrowed | <i>benaci</i> var. <i>tenuifor-</i>
<i>ceps</i> , Bött. | |
| 53. Anterior edge of superior claspers absolutely
straight | <i>dissimilis</i> , Meig. | |
| Superior claspers curved ventrally | | 54 |
| 54. Presutural acrostichals present. Vein I bristly .. | <i>ancilla</i> , Rond. | |
| Presutural acrostichals absent. Vein I bare .. | <i>metopina</i> , Villen. | |
| 55. Thorax appearing black with 4 white stripes.
Anterior claspers long and pointed, upcurved | <i>lacrymans</i> , Billen. | |
| Body colour normal. Anterior claspers sinuate | <i>porrecta</i> , Bött. | |
| 56. End piece of penis slightly up-curved, rounded
and not pointed apically | | 57 |
| End piece of penis pointed, its upper edge some-
times incised | | 58 |
| 57. Second abdominal bare | <i>arvorum</i> , Rond. | |
| Second abdominal with long marginals .. | <i>thalhammeri</i> , Bött. | |
| 58. Hind femora with lower front macrochaetal row | | 59 |
| Hind femora without lower macrochaetal row
except the preapical | | 63 |
| 59. Mid femora thick and short bristled, no typical
comb | | 60 |
| Mid femora with typical comb | | 62 |
| 60. Second abdominal bare or with appressed margi-
nals. Vein I bare | <i>proxima</i> , Rond. | |
| Second abdominal with long, outstanding marginals | | 61 |
| 61. Vein I bare | <i>frenata</i> , Pand. | |
| Vein I bristly | <i>frenata</i> var. <i>cruen-</i>
<i>tata</i> , Pand. | |

62. Posterior dorso-centrals 2-1, usually a weak additional bristle in the gap	<i>consanguinea</i> , Pand. nec. Rond.	
Posterior dorso-centrals 3 as usual	<i>pauciseta</i> , Pand.	
63. Second abdominal bare	<i>ebrachiata</i> , Pand.	
Second abdominal with long marginals	<i>ebrachiata</i> , Pand. var. <i>meadei</i> , Bött.	
64. Second abdominal bare		65
Second abdominal with marginals		78
65. Fifth sternite with 'brush'	<i>similis</i> , Pand.	
Fifth sternite without brush		66
66. Third sternite appressedly haired		67
Third sternite out-standingly haired		77
67. GS1 black, with strong marginals	<i>mehadiensis</i> , Bött.	
GS1 grey, no strong marginals		68
68. Penis with oblong, stalked appendage, bicornuate above, anteriorly		69
Penis not so formed		70
69. Horns of appendage to penis shorter and incurved. Palpi and GS2 black	<i>albiceps</i> , Meig.	
Horns of appendage to penis longer and up-curved. Palpi and GS2 red	<i>hirtipes</i> , Wd.	
70. Ventral process of penis stout, no distal rod-like processes		71
Penis with 2 pairs of rod-like apophyses, often crossing one another		74
71. Basal piece of fifth sternite bent ventral-wards		72
Basal piece of fifth sternite not so bent		73
72. Basal piece of fifth sternite produced nasiform, shortly double tipped	<i>aratrix</i> , Pand.	
Basal piece of fifth sternite not nasiform, forming a cover over the lamellae	<i>czernyi</i> , Bött.	
73. Superior claspers long, parallel margined	<i>uliginosa</i> , Kram.	
Superior claspers short and broad, posterior margin sharply angled before transverse pre-apical edge	<i>schützei</i> , Kram.	
74. Hind tibiae fringed on inside, outside almost bare. Hind tibiae double fringed	<i>teretirostris</i> , Pand.	75
75. Antennae reaching below lower eye-margin, third joint 2ce. 2nd. GS2 black	<i>tuberosa</i> var. <i>harpax</i> , Pand.	
Antennae only reaching to lower eye-margin, third joint only 1½ times 2nd		76
76. GS2 black	<i>tuberosa</i> , Pand.	
GS2 red	<i>tuberosa</i> var. <i>exuberans</i> , Pand.	
77. GS1 with marginals. Superior claspers bent and evenly narrowed to tips	<i>scoparia</i> , Pand.	
GS1 without marginals. Superior claspers with posterior hump	<i>pseudoscoparia</i> , Kram.	
78. Frons strikingly inflated near antennal roots. GS2 normally red	<i>protuberans</i> , Pand.	
Frons not inflated		79
79. Anterior much longer than posterior claspers	<i>carnaria</i> , Meig.	
Anterior and posterior claspers about equally long		80
80. Hind margin of superior claspers evenly convex to tip	<i>vicina</i> , Villen.	
Hind margin of superior claspers concave before tip	<i>vicina</i> , Villen. var. <i>adriatica</i> , Bött.	
81. Superior claspers narrow, no posterior apical emargination		82
Superior claspers broad, posterior edge on apical half with emargination and subsequent hump		83
82. Prescutellars wanting. GS1 with marginals	<i>haemorrhoidalis</i> , Meig.	
Prescutellars present, GS1 without marginals	<i>beckeri</i> , Villen.	
83. GS1 black	<i>falculata</i> , Pand.	
GS1 red		84

84. Frontal stripe distinctly broader than a parafrontal		<i>cultellata</i> , Pand.	
Frontal stripe narrower than a parafrontal	..	<i>securifera</i> , Villen.	
85. Posterior dorso-centrals 2	..	<i>longestylata</i> , Strobl.	
Posterior dorso-centrals 3	..		86
86. No lateral verticals. Scutellum with crossed apicals. Antennae reddish-brown	..	<i>minima</i> , Rond.	
Lateral verticals present. No scutellar apicals.			
Antennae blackish-grey	..	<i>monspellensia</i> , Bött.	

APPENDIX II.—ADDENDA TO PREVIOUSLY PUBLISHED FAUNISTIC PAPERS.

1. Fauna of Paresnath Hill, Annandale, *Rec. Ind. Mus.*, VII, pp. 33-40
Sarcophaga knabi, Park.
2. 'Diptera of the Abor Expedition,' Brunetti, *Rec. Ind. Mus.*, VIII, pp. 149-190.
Sarcophaga knabi, Park.
Brunetti states that two specimens were taken, the other is a female.
3. 'Diptera of the Simla District,' Brunetti, *Rec. Ind. Mus.*, XIII, pp. 59-101.
Sarcophaga haemorrhoidalis, Meig.
Sarcophaga haematodes, Meig.
These are the only two actually recorded, but probably further collecting will add *albiceps*, Meig. and *fulcata*, Pand. Brunetti's remarks that probably the Muscid Fauna will prove to be European is, as far as this genus is concerned, amply proved.
4. 'Fauna of an Island in the Chilka Lake,—Diptera,' Dover, *Rec. Ind. Mus.*, XXII, pp. 393-396.
Sarcophaga knabi, Park.
Sarcophaga hirtipes, Wd. var. *orchidea*, Bött.
Sarcophaga orientaloidea, sp. nov.
Sarcophaga futilis, sp. nov.
Sarcophaga dux, Thoms. var. *harpax*, Pand.
Sarcophaga ruficornis, Fab.
Thus instead of the "two or three species" of the genus attributed to the Fauna by Dover, there are no less than six already known. Evidently the sea influence is insufficient to produce *Sarcophila cinerea*, Fab.
5. 'Notes on the Diptera of the Khasia Hills,' Senior-White, *Mem. Dept. Agric. India*, (Ent. Ser.), VII, pp. 83-103.
Sarcophaga albiceps, Meig. Shillong and Cherrapunji.
Sarcophaga khasiensis, sp. nov. Cherrapunji.
My remarks on the distribution of the supposed 'species' should be entirely disregarded, and reference made to section IX of the present paper.