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THE
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the Year 1913.*

LONDON:

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THE
BRITISH
PARASITIC COPEPODA

BY
THOMAS SCOTT, LL.D., F.L.S.

AND
ANDREW SCOTT, A.L.S.

VOLUME II
COPEPODA PARASITIC ON FISHES
PLATES

LONDON
PRINTED FOR THE RAY SOCIETY

AND SOLD BY
DULAU & CO., LTD., 37, SOHO SQUARE, W.

1913

PRINTED BY ADLARD AND SON
LONDON AND DORKING

595.345

S43

8 Mar. 1911

THE AUTHORS

DESIRE, WITH THE MOST SINCERE RESPECT,

TO DEDICATE THIS WORK

TO THE

REV. CANON A. M. NORMAN, M.A.,

D.C.L., LL.D., F.R.S., F.L.S., ETC.,

IN GRATITUDE FOR HIS UNFAILING

KINDNESS AND ASSISTANCE

EXTENDED TO THEM FOR MANY YEARS.

NOTE BY THOMAS SCOTT.

All the figures, unless otherwise described, have been prepared by my son, Andrew Scott, from specimens examined by the authors.

The illustrations have all been engraved by André & Sleigh, Ltd., of Bushey, Watford.

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<i>a.</i> antennules.	<i>o.</i> ovary.
<i>a</i> ¹ . antennæ.	<i>od.</i> oviduct.
<i>an.</i> anus.	<i>oe.</i> œsophagus.
<i>b.</i> median frontal sucker.	<i>os.</i> ovisac.
<i>c.</i> filament duct.	<i>p</i> ¹ . first pair of feet.
<i>cg.</i> cement gland.	<i>p</i> ^{II} . second pair of feet.
<i>dg.</i> digestive gland.	<i>p</i> ^{III} . third pair of feet.
<i>e.</i> eyes.	<i>p</i> ^{IV} . fourth pair of feet.
<i>f.</i> filament.	<i>p</i> ^V . fifth pair of feet.
<i>g.</i> ganglia.	<i>p</i> ^{VI} . sixth pair of feet.
<i>i.</i> intestine.	<i>rs.</i> receptaculum seminis.
<i>ls.</i> lateral frontal sucker.	<i>rt.</i> rectum.
<i>lns.</i> lens.	<i>rtn.</i> retina.
<i>m.</i> mouth.	<i>s.</i> stomach.
<i>md.</i> mandible.	<i>sbg.</i> sub-œsophageal ganglion.
<i>mx.</i> first maxilla.	<i>spg.</i> supra-œsophageal ganglion.
<i>mx</i> ¹ . second maxilla.	<i>sp.</i> spermatophore.
<i>mxp.</i> first maxilliped.	<i>t.</i> testis.
<i>mxp</i> ¹ . second maxilliped.	<i>u.</i> vulva.
<i>n.</i> nerves.	<i>vd.</i> vas deferens.

Nos. 1-13, NERVES, AS FOLLOWS:—

1. optic.	9. first maxillipeds.
2. antennules.	10. second maxillipeds.
3. antennæ.	11. first feet and stomach muscles.
4. mandibles.	12. second feet and posterior cephalic muscles.
5. lateral frontal margins.	13. third feet, fourth feet, fifth feet, genital segment, and abdomen.
6. first maxillæ.	
7. second maxillæ.	
8. lateral cephalic muscles.	

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4. *Bomolochus onosi* T. Scott, ♀, dorsal view, × 48. (p. 39.)

[Note.—At page 30, vol. I (text), after *Ergasilus nanus* read P. J. van Beneden instead of Claus.]

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3. Foot of third pair.
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5. Abdomen.

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7. Second maxilliped, ♀.

8. Foot of fourth pair, ♀.

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(Figures much enlarged.)

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8. ♀ Foot of fourth pair.
9. ♀ Sternal fork.
10. ♀ Second maxilliped.
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4. *Lepeophtheirus salmonis* (Kröyer). (p. 71.)
 4. Dorsal view, ♀, $\times 4$.
- 5, 6. *Lepeophtheirus pollachii* Bassett-Smith. (p. 73.)
 5. Dorsal view, ♀, $\times 10$.
 6. Dorsal view, ♂, $\times 13$.

Plate 18

PLATE XVIII.

FIGS.

- 1-3. *Caligus centrodoni* Baird, ♀. (p. 50.)
1. Sternal fork.
2. Second maxilliped.
3. Foot of fourth pair.
- 4, 5. *Caligus labracis* T. Scott, ♀. (p. 53.)
4. Sternal fork.
5. Foot of fourth pair.
- 6, 7. *Caligus diaphanus* Nordmann, ♀. (p. 60.)
6. Second maxilliped.
7. Foot of fourth pair.
- 8-10. *Lepeophtheirus hippoglossi* (Kröyer), ♀. (p. 67.)
8. Sternal fork.
9. First maxilliped.
10. Second maxilliped.
- 11, 12. *Lepeophtheirus salmonis* (Kröyer), ♀. (p. 71.)
11. Sternal fork.
12. Foot of fourth pair.
- 13-15. *Lepeophtheirus pollachii* Bassett-Smith, ♀. (p. 73.)
13. First maxilliped.
14. Second maxilliped.
15. Foot of fourth pair.
- 16-19. *Lepeophtheirus sturionis* (Kröyer), ♀. (p. 74.)
16. Sternal fork.
17. Second maxilliped.
18. Foot of fourth pair.
19. Furcal joints.

(Figures much enlarged.)

Plate 19

PLATE XIX.

FIGS.

- 1-9. *Lütkenia asterodermi* Claus, ♀. (p. 76.)
1. Antennule.
2. Antenna.
3. First maxilliped.
4. Second maxilliped.
5. Foot of first pair.
6. Foot of second pair.
7. Foot of third pair.
8. Foot of fourth pair.
9. Abdomen and furcal joints.
10. *Elytrophora brachyptera* Gerstaecker. (p. 83.)
10. Foot of second pair, ♀.
11-18. *Phyllothreus cornutus* (M. Edwards), ♀. (p. 92.)
11. Antennule.
12. Antenna.
13. First maxilliped.
14. Second maxilliped.
15. Foot of first pair.
16. Foot of second pair.
17. Foot of third pair.
18. Foot of fourth pair.

(Figures much enlarged.)

Plate 20

PLATE XX.

FIGS.

1-8. *Nogaus ambiguus* T. Scott, ♂. (p. 78.)

1. Dorsal view, $\times 13$.
2. Antennule.
3. First maxilliped.
4. Second maxilliped.
5. Foot of first pair.
6. Foot of second pair.
7. Foot of third pair.
8. Foot of fourth pair.

9. *Chondracanthus annulatus* Olsson. (p. 169.)

9. Lateral view, ♂, $\times 50$.

10. *Chondracanthus merluccii* (Holten). (p. 180.)

10. Lateral view, ♂, $\times 115$.

(Figures 2-8 much enlarged.)

Plate 21

PLATE XXI.

FIGS.

1. *Lepeophtheirus sturionis* (Kröyer). (p. 74.)
 1. Dorsal view, ♀, $\times 6.6$.
2. *Pandarus bicolor* Leach. (p. 95.)
 2. Dorsal view, ♂ (juv.) = *Nogagus latus* T. Scott, $\times 15$.
- 3, 4. *Cecrops latreillii* Leach. (p. 98.)
 3. Dorsal view, ♀, $\times 2$.
 4. Dorsal view, ♂, $\times 2$.
5. *Orthagoriscicola muricata* (Kröyer). (p. 100.)
 5. Dorsal view, ♀, $\times 2.5$.

Plate 22

PLATE XXII.

FIGS.

- 1, 2. *Trebius caudatus* Kröyer. (p. 81.)
 1. Dorsal view, ♀, $\times 6\cdot6$.
 2. Dorsal view, ♂, $\times 15$.
3. *Dinemoura producta* (O. F. Müller). (p. 86.)
 3. Dorsal view, ♀, $\times 3\cdot3$.
4. *Echthrogaleus coleoptratus* (Guérin). (p. 89.)
 4. Dorsal view, ♀, $\times 4$.
- 5, 6. *Pandarus bicolor* Leach. (p. 95.)
 5. Dorsal view, ♀, $\times 5$.
 6. Dorsal view, ♂, $\times 10$.

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PLATE XXIII.

FIGS.

- 1, 2. *Elytrophora brachyptera* Gerstaecker. (p. 83.)
 1. Dorsal view, ♀, $\times 8$.
 2. Dorsal view, ♂, $\times 8$.
3. *Phyllothreus cornutus* (M. Edwards). (p. 92.)
 3. Dorsal view, ♀, $\times 4\cdot5$.
4. *Lütkenia asterodermi* Claus. (p. 76.)
 4. Dorsal view, ♀ (enlarged).
- 5, 6. *Anthosoma crassum* (Abildgaard). (p. 108.)
 5. Dorsal view, ♀, $\times 3$.
 6. Ventral view, ♀, $\times 3$.

Plate 24

PLATE XXIV.

FIGS.

- 1, 2. *Caligus curtus* O. F. Müller. (p. 45.)
1. Dorsal view, ♀, $\times 8$.
2. Dorsal view, ♂, $\times 6\cdot5$.
3, 4. *Philorthragoriscus serratus* (Kröyer). (p. 104.)
3. Dorsal view, ♀, $\times 12\cdot5$.
4. Dorsal view, ♂, $\times 20$.

Plate 25

PLATE XXV.

FIGS.

- 1-6. *Thersitina gasterostei* (Pagenstecher), ♀. (p. 42.)
1. Antennule.
2. Antenna.
3. Second maxilliped.
4. Foot of first pair.
5. Foot of fourth pair.
6. Abdomen and furcal joints.
7-9. *Caligus curtus* O. F. Müller, ♀. (p. 45.)
7. Sternal fork.
8. Second maxilliped.
9. Foot of fourth pair.
10. *Lepeophtheirus thompsoni* Baird. (p. 69.)
10. Sternal fork, ♀.
11-16. *Caligus minimus* Otto, ♀ & ♂ (p. 46.)
11. Antennule, ♀.
12. Sternal fork, ♀.
13. Sternal fork, ♂.
14. Second maxilliped, ♀.
15. Foot of fourth pair, ♀.
16. Second maxilliped, ♂.

(Figures much enlarged.)

Plate 26

PLATE XXVI.

FIGS.

- 1-3. *Dinemoura producta* (O. F. Müller), ♀. (p. 86.)
1. Foot of second pair.
2. Foot of fourth pair.
3. Fifth foot.
- 4-19. *Pandarus bicolor* Leach, ♀ & ♂. (p. 95.)
4. ♀ Antennule.
5. Antenna.
6. Maxilla.
7. First maxilliped.
8. Second maxilliped.
9. Foot of first pair.
10. Foot of second pair.
11. Foot of third pair.
12. Foot of fourth pair.
13. ♂ Antennule.
14. Antenna.
15. Maxilla.
16. First maxilliped.
17. Second maxilliped.
18. Foot of first pair.
19. Foot of second pair.

(Figures much enlarged.)

Plate 27

PLATE XXVII.

FIGS.

- 1-8. *Dinemoura producta* (O. F. Müller), ♀. (p. 86.)
1. Antennule.
2. Antenna.
3. Mandible.
4. Maxilla.
5. First maxilliped.
6. Second maxilliped.
7. Foot of first pair.
8. Foot of third pair.
9, 10. *Cecrops latreillii* Leach, ♀. (p. 98.)
9. Antenna.
10. First maxilliped.
11-24. *Philorthragoriscus serratus* (Kröyer), ♀ & ♂. (p. 104.)
11. ♀ Antennule.
12. Antenna.
13. Mandible.
14. Maxilla.
15. First maxilliped.
16. Second maxilliped.
17. Foot of first pair.
18. Foot of third pair.
19. Foot of fourth pair.
20. Abdomen and furcal joints.
21. ♂ Antenna.
22. Maxilla.
23. Second maxilliped.
24. Foot of second pair.

(Figures much enlarged.)

Plate 28

PLATE XXVIII.

FIGS.

- 1-7. *Cecrops latreillii* Leach, ♀. (p. 98.)
1. Antennule.
 2. Second maxilliped.
 3. Foot of first pair.
 4. Foot of second pair.
 5. Foot of third pair.
 6. Foot of fourth pair.
 7. Fifth foot.
- 8-18. *Orthagoriscola muricata* (Kröyer), ♀. (p. 100.)
8. Antennule.
 9. Antenna.
 10. Mandible.
 11. Maxilla.
 12. First maxilliped.
 13. Second maxilliped.
 14. Foot of first pair.
 15. Foot of second pair.
 16. Foot of third pair.
 17. Foot of fourth pair.
 18. Fifth foot.

(Figures much enlarged.)

Plate 29

PLATE XXIX.

FIGS.

1. *Echthrogaleus lütkeni* (Norman). (p. 90.)
 1. Dorsal view, ♂ (enlarged).
- 2-5. *Lernanthropus kröyeri* P. J. van Beneden. (p. 110.)
 2. Dorsal view, ♀, × 13·4.
 3. Abdomen and furcal joints, ♀ (much enlarged).
 4. Dorsal view, ♂, × 13·4.
 5. Abdomen and furcal joints, ♂ (much enlarged).

Plate 30

PLATE XXX.

FIGS.

- 1-8. *Echthrogaleus lütkeni* (Norman), ♂. (p. 90.)
1. Antennule.
2. Antenna.
3. First maxilliped.
4. Second maxilliped.
5. Foot of first pair.
6. Foot of second pair.
7. Foot of third pair.
8. Foot of fourth pair.
- 9-17. *Lernanthropus kröyeri* P. J. van Beneden, ♀. (p. 110.)
9. Antennule with secondary process.
10. Antenna.
11. Mandible.
12. Maxilla.
13. First maxilliped.
14. Second maxilliped.
15. Foot of first pair.
16. Foot of second pair.
17. Outer ramus of second foot, ♂.

(Figures much enlarged.)

Plate 31

PLATE XXXI.

FIGS.

- 1-6. *Elytrophora brachyptera* Gerstaecker, ♀. (p. 83.)
1. Antenna.
 2. First maxilliped.
 3. Second maxilliped.
 4. Foot of first pair.
 5. Foot of fourth pair.
 6. Antenna, ♂.
- 7-18. *Dichelestium oblongum* (Abildgaard), ♀ & ♂. (p. 106.)
7. ♀ Antennule.
 8. Antenna.
 9. Mandible.
 10. Maxilla.
 11. First maxilliped.
 12. Second maxilliped.
 13. Foot of first pair.
 14. Foot of second pair.
 15. Foot of fourth pair.
 16. ♂ Antenna.
 17. Foot of second pair.
 18. Foot of fourth pair.

(Figures much enlarged.)

Plate 32

PLATE XXXII.

FIGS.

1-11. *Hatschekia mulli* (P. J. van Beneden), ♀. (p. 114.)

1. Adult female, dorsal view, $\times 24.5$.
2. Lateral view of head and thorax, adult $\times 36$.
3. Dorsal view, juv., $\times 36$.
4. Antennule.
5. Antenna.
6. Spiniform process at base of antenna.
7. Mandible.
8. Maxilla.
9. Maxilliped.
10. Foot of first pair.
11. Foot of second pair.

(Figures 4-11 much enlarged.)

Plate 33

PLATE XXXIII.

FIGS.

1. *Hatschekia cluthæ* (T. Scott). (p. 117.)
 1. Dorsal view, ♀, × 58.
2. *Hatschekia labracis* (P. J. van Beneden). (p. 115.)
 2. Dorsal view, ♀, × 28.
- 3, 4. *Hatschekia hippoglossi* (Kröyer). (p. 112.)
 3. Dorsal view, ♀, × 7.
 4. Dorsal view, ♂, × 34.
5. *Thysanote impudica* (Nordmann). (p. 187.)
 5. Dorsal view, ♀, × 10.
6. ? *Lernæopoda lampri* sp. nov. (p. 202.)
 6. Lateral view, ♂, × 14.

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Plate 34

PLATE XXXIV.

FIGS.

- 1-5. *Hatschekia cluthæ* (T. Scott), ♀. (p. 117.)
1. Antennule.
2. Antenna.
3. Maxilla.
4. Second maxilliped.
5. Foot of first pair.
- 6, 7. *Hatschekia labracis* (P. J. van Beneden), ♀. (p. 115.)
6. Antennule.
7. Antenna.
- 8-11. *Hatschekia hippoglossi* (Kröyer), ♀. (p. 112.)
8. Antennule.
9. Mandible.
10. Second maxilliped.
11. Foot of first pair.

(Figures much enlarged.)

PLATE XXXIV

Plate 35

PLATE XXXV.

FIGS.

- 1, 2. *Hatschekia cornigera* T. Scott, ♀. (p. 118.)
 1. Dorsal view, $\times 40$.
 2. Lateral view of head and thorax, $\times 80$.
- 3-7. *Hatschekia pygmæa* T. Scott, ♀. (p. 119.)
 3. Dorsal view, $\times 45$.
 4. Maxilliped.
 5. Foot of first pair.
 6. Foot of second pair.
 7. Abdomen and furcal joints.

(Figures 4-7 much enlarged.)

Plate 36

PLATE XXXVI.

FIGS.

1-5. *Hatschekia cornigera* T. Scott, ♀. (p. 118.)

1. Antennule.

2. Antenna.

3. Maxilliped.

4. Foot of first pair.

5. Foot of second pair.

6-9. *Hatschekia pygmæa* T. Scott, ♀. (p. 119.)

6. Antennule.

7. Antenna.

8. Mandible.

9. Maxilla.

(Figures much enlarged.)

PLATE XXXVI

Plate 37

PLATE XXXVII.

FIGS.

1. *Eudactylina acuta* P. J. van Beneden. (p. 126.)
 1. Dorsal view, ♀, × 41.
- 2, 3. *Eudactylina acanthii* A. Scott. (p. 128.)
 2. Dorsal view, ♀, × 41.
 3. Lateral view, ♀, × 41.
- 4, 5. *Eudactylina similis* T. Scott. (p. 130.)
 4. Lateral view, ♀, × 34.
 5. Lateral view, ♂, × 34.
- 6, 7. *Eudactylina minuta* T. Scott. (p. 133.)
 6. Dorsal view, ♀, × 40.
 7. Lateral view, ♀, × 40.

Plate 38

PLATE XXXVIII.

FIGS.

- 1-5. *Eudactylina acuta* P. J. van Beneden, ♀. (p. 126.)
1. Antennule.
2. Foot of first pair.
3. Foot of second pair.
4. Foot of fifth pair.
5. Part of abdomen, and furcal joints.
- 6-12. *Eudactylina acanthii* A. Scott, ♀. (p. 128.)
6. Antennule.
7. Antenna.
8. Foot of first pair.
9. Foot of second pair.
10. Foot of fourth pair.
11. Foot of fifth pair.
12. Part of abdomen, and furcal joints.

(Figures much enlarged.)

Plate 39

PLATE XXXIX.

FIGS.

1-17. *Eudactylina similis* T. Scott, ♀ & ♂. (p. 130.)

1. ♀ Antennule.
2. Antenna.
3. Mandible.
4. Maxilla.
5. First maxilliped.
6. Second maxilliped.
7. Foot of first pair.
8. Foot of second pair.
9. Foot of fourth pair.
10. Foot of fifth pair.
11. Part of abdomen, and furcal joints.
12. ♂ Antennule.
13. Second maxilliped.
14. Foot of first pair.
15. Foot of second pair.
16. Foot of fourth pair.
17. Part of abdomen, and furcal joints.

(Figures much enlarged.)

Plate 40

PLATE XL.

FIGS.

1-9. *Eudactylina minuta* T. Scott, ♀. (p. 133.)

1. Antennule.
2. Antenna.
3. First maxilliped.
4. Second maxilliped.
5. Foot of first pair.
6. Foot of second pair.
7. Foot of fourth pair.
8. Foot of fifth pair.
9. Part of abdomen, and furcal joints.

(Figures much enlarged.)

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Plate 41

PLATE XLI.

FIGS.

1. *Congericola pallida* P. J. van Beneden, ♀ dorsal view, × 17. (p. 124.)
- 2-4. *Chondracanthus depressus* T. Scott. (p. 172.)
 2. ♀ Dorsal view, × 12.
 3. Posterior end of body in dorsal view, × 12.
 4. Var. *oblongus*, ♀ dorsal view, × 12. (p. 173.)
5. *Chondracanthus zeii* De la Roche, ♀ dorsal view, × 5. (p. 177.)
6. *Chondracanthus ornatus* T. Scott, ♀ dorsal view, × 10. (p. 182.)

Plate 42

PLATE XLII.

FIGS.

- 1-8. *Lernæa branchialis* Linn. (p. 142.)
 1. Mature female, side view, $\times 4$.
 2. Newly hatched nauplius $\times 51$. (p. 21.)
 3. Very young female, unfertilized, dorsal view, $\times 51\frac{1}{2}$. (p. 21.)
 4. Fertilized female, after leaving the gills of a flounder, dorsal view $\times 27\frac{1}{2}$. (p. 21.)
 5. Mature male, dorsal view, $\times 28\frac{1}{2}$. (p. 21.)
 6. Fertilized female, 'Pennella stage,' just after attachment to the gills of a whiting, dorsal view, $\times 15\frac{1}{2}$. (p. 23.)
 - 6a. A later stage than fig. 6; the folding has just been completed; side view, natural size. (p. 23.)
 7. Apex of the gill-ray of a flounder, normal, $\times 18$. (p. 22.)
 8. Apex of the gill-ray of a flounder, shewing malformation caused by the young *Lernæa*, $\times 18$. (p. 22.)

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Plate 43

PLATE XLIII.

FIGS.

1-7. *Lernæa branchialis* Linn. (p. 142.)

1. Fertilized female, ventral view, shewing the appendages, the reproductive organs, and the nervous system, $\times 47\frac{1}{2}$. (p. 22.)
2. Mature female, seen from the right side, shewing the maxilliped and four pairs of feet, the alimentary canal, and the reproductive organs; from a specimen cleared in xylol, $\times 4$. (p. 19.)
3. Transverse section through the middle of the swollen region, shewing the ovary, the oviducts, cement glands, and intestine, $\times 9$. (p. 21.)
4. Transverse section through the abdomen, $\times 20$. (p. 22.)
5. Portion of the cement-gland, $\times 20$. (p. 21.)
6. Transverse section through the region of the eyes of a young fertilized female, $\times 80$. (p. 22.)
7. Front view of the anchor processes of an adult female, $\times 4$. (p. 22.)

Plate 44

PLATE XLIV.

FIGS.

1. *Lernæa lusci* Bassett-Smith, ♀ side view, × 6. (p. 144.)
2. Another specimen (♀) *in situ* on gill-arch of fish, × about 2.
3. *Lernæa minuta*, T. Scott, ♀ side view, × about 5. (p. 145.)
4. *Lernæa lumpi*, T. Scott, ♀ side view, × about 2. (p. 146.)
- 5-7. *Hæmobaphes cyclopterina* (Fabr.). (p. 147).
 5. Side view (head wanting), × 9.
 6. The head, after Steenstrup & Lütken, enlarged.
 7. The same, seen from another position, enlarged.
8. *Hæmobaphoides ambiguus* T. Scott, ♀ side view, × 7. (p. 148.)

Plate 45

PLATE XLV.

FIGS.

1. *Rebelula edwardsi* (Kolliker), ♀ dorsal view, enlarged.
(p. 162.)
- 2, 3. *Philichthys xiphiæ* Steenstrup, ♀. (p. 139.)
 2. A young specimen, dorsal view, enlarged.
 3. An older specimen, dorsal view, enlarged.
- 4, 5. *Dichelestium oblongum* (Abildgaard). (p. 106.)
 4. Dorsal view, ♀, × about 4.
 5. Dorsal view, ♂, × about 4.
6. *Tripaphylus musteli* P. J. van Beneden, ♂ side view, enlarged. (p. 160.)
7. *Chondracanthus ornatus* T. Scott, ♂ side view, greatly enlarged. (p. 182.)
8. *Brachiella rostrata* Kröyer, ♂ side view, × about 25.
(p. 205.)

Plate 46

PLATE XLVI.

FIGS.

1-5. *Lernæenicus sprattæ* (Sowerby). (p. 156.)

1. Female *in situ* in eye of sprat, natural size.
2. Female removed from fish, $\times$ about $2\frac{1}{3}$.
3. Head and neck of female, more enlarged.
4. Antennule, greatly enlarged.
5. Antenna, greatly enlarged.

6-9. *Lernæenicus encrasicola* (Turton). (p. 158.)

6. Female *in situ* in back of sprat, natural size.
7. Shows head of female penetrating into the abdominal cavity of the sprat, enlarged.
8. Head of female, ventral view, enlarged.
9. Head, side view, enlarged.

Plate 47

PLATE XLVII.

FIGS.

1. *Chondracanthus cornutus* (O. F. Müller), ♀, × about 6. (p. 168.)
2. *Chondracanthus cornutus*, var. ♀, × 6. (p. 169.)
3. *Chondracanthus annulatus* Olsson, ♀, × 4. (p. 169.)
4. *Chondracanthus soleæ* Kröyer, ♀, × 7. (p. 170.)
5. *Chondracanthus fluræ* Kröyer, ♀, × 6. (p. 171.)
6. *Chondracanthus limandæ* Kröyer, ♀, × 13. (p. 174.)
7. *Chondracanthus clavatus* Bassett-Smith, ♀, × 8. (p. 175.)
8. *Chondracanthus merluccii* (Holten), ♀, × 8. (p. 180.)

Plate 48

PLATE XLVIII.

FIGS.

- 1-3. *Lepeophtheirus thompsoni* Baird, ♀. (p. 69.)
 1. Sternal fork.
 2. Sternal fork, another form.
 3. Foot of fourth pair.
 - 4, 5. *Lepeophtheirus pollachii* Bassett-Smith, ♀. (p. 73.)
 4. Sternal fork.
 5. First maxilliped.
 6. *Caligus brevicaudatus* A. Scott, ♀. Sternal fork.
(p. 56.)
 7. *Caligus diaphanus* Nordmann, ♀. Sternal fork.
(p. 60.)
 - 8-12. *Lernæopoda salmonea* (Linn.), ♀. (p. 199.)
 8. Antennule.
 9. Antenna.
 10. Mandible.
 11. Maxilla.
 12. First maxilliped.
 - 13-16. *Chondracanthus nodosus* (O. F. Müller), ♀. (p. 176.)
 13. Antennule.
 14. Mandible and maxilla.
 15. Foot of first pair.
 16. Foot of second pair.
 17. *Ergasilus nanus* P. J. van Beneden, ♀. Antenna.
(p. 34.)
 18. *Brachiella insidiosa* Heller, adult male, side view,
× 18. (p. 206.)
- (Figs. 1-17 much enlarged.)

Plate 49

PLATE XLIX.

FIGS.

- 1-7. *Tripaphylus musteli* (P. J. van Beneden), ♂. (p. 160.)
1. Antennule.
2. Antenna.
3. Mandible.
4. Maxilla.
5. First maxilliped.
6. Second maxilliped.
7. Abdomen.
- 8-11. *Thysanote impudica* (Nordmann), ♀. (p. 187.)
8. Antennule.
9. Mandible.
10. Maxilla.
11. First maxilliped.
- 12-16. (?) *Lernæopoda lampri* sp. n., ♂. (p. 202.)
12. Antenna.
13. Mandible.
14. Maxilla.
15. First maxilliped.
16. Second maxilliped.

(Figures much enlarged.)

PLATE XLIX

Plate 50

PLATE L.

FIGS.

- 1-5. *Lerneocera cyprinacea* (Linn.), ♀. (p. 154.)
1. A specimen seen from the side, $\times 9$.
2. The head, front view.
3. The head, seen from another position, more enlarged than fig. 2.
4. A specimen of *L. cyprinacea*, $\times 5$. (After Selago.)
5. Another specimen, $\times$ about 3. (After Baird.)
6-8. *Achtheres percarum* Nordmann. (p. 193.)
6. A female, dorsal view, $\times 18$.
7. Distal extremity of second maxillipeds, enlarged.
8. A male, dorsal view, $\times 85$.
9. *Brachiella bispinosa* Nordmann, ♀ dorsal view, $\times 7$. (p. 211.)

(Figs. 1-3 and 6-9 after Nordmann.)

Plate 51

PLATE LI.

FIGS.

1. *Tripaphylus musteli* (P. J. van Beneden), ♀, $\times 2\frac{1}{2}$ (head wanting). (p. 160.)
2. *Pennella orthagorisci* E. P. Wright, ♀, about natural size (head wanting). (p. 150.) (Thomas Edward's specimen.)
3. *Sphyrion lumpi* (Kröyer), ♀, $\times$ about 2. (p. 164.)
4. A smaller specimen, rather imperfect, $\times$ about 4.
5. *Rebelula edwardsi* (Kölliker), ♀, $\times$ about 2 (head wanting). (p. 162.)
6. *Thersitina gasterostei* (Pagenstecher), ♀, $\times 27$. (p. 42.)
7. *Clavella lophii* (M. Edwards), ♀, $\times 2$. (p. 226.)

(All the figures shew dorsal view.)

Plate 52

PLATE LII.

FIGS.

- 1-3. *Chondracanthus nodosus* (O. F. Müller). (p. 176.)
 1. Adult female, dorsal view, $\times 8\frac{1}{2}$.
 2. A young specimen, dorsal view, $\times$ about 9.
 3. An adult male, side view, $\times 80$.
4. *Chondracanthus lophii* Johnston, ♀, $\times$ above 5. (p. 179.)
5. *Chondracanthus cornutus* (O. F. Müller), ♂, side view, $\times$ about 100. (p. 168.)
6. *Medesicaste asellinum* (Linn.), ♀ dorsal view, $\times 7\frac{1}{2}$. (p. 184.)

Plate 53

PLATE LIII.

FIGS.

- 1-4. *Chondracanthus cornutus* (O. F. Müller), ♀ & ♂.
(p. 168.)
1. ♀ Antennule.
2. Mandible.
3. ♂ Foot of first pair.
4. Foot of second pair.
- 5-9. *Chondracanthus cornutus*, var., ♀ & ♂. (p. 169.)
5. ♀ Antennule.
6. Mandible.
7. ♂ Antennule.
8. Foot of first pair.
9. Foot of second pair.
- 10, 11. *Chondracanthus fluræ* Kröyer, ♀. (p. 171.)
10. Antennule.
11. Mandible.
- 12-15. *Chondracanthus soleæ* Kröyer, ♀ & ♂. (p. 170.)
12. ♀ Antennule.
13. Mandible.
14. ♂ Antennule.
15. Foot of second pair.
- 16-19. *Chondracanthus nerluccii* (Holten), ♀ & ♂. (p. 180.)
16. ♀ Antennule.
17. Mandible.
18. ♂ Foot of first pair.
19. Foot of second pair.

(Figures much enlarged.)

Plate 54

PLATE LIV.

FIGS.

- 1-11. *Trebius caudatus* Kröyer, ♀. (p. 81.)
1. Antennule.
2. Antenna.
3. Mandible.
4. Maxilla.
5. Sternal fork.
6. First maxilliped.
7. Second maxilliped.
8. Foot of first pair.
9. Foot of second pair.
10. Foot of fourth pair.
11. Fifth foot.
- 12-17. *Charopinus dalmanni* (Retzius), ♀ & ♂. (p. 189.)
12. ♀ Antennule.
13. Antenna.
14. Mandible.
15. Maxilla.
16. First maxilliped.
17. ♂ Second maxilliped.
- 18-22. *Charopinus ramosus* Kröyer, ♀. (p. 191.)
18. Antennule.
19. Antenna.
20. Mandible.
21. Maxilla.
22. First maxilliped.

(Figures much enlarged.)

Plate 55

PLATE LV.

FIGS.

- 1-4. *Charopinus dalmanni* (Retzius). (p. 189.)
1. Female, dorsal view, $\times 2$.
2. Female, side view, $\times 2$.
3. Ends of the second maxillipeds, slightly enlarged.
4. Male, side view, $\times 36$.
5. *Charopinus dubius* T. Scott, ♀, dorsal view, $\times 3\frac{1}{2}$.
(p. 190.)
6, 7. *Charopinus ramosus* Kröyer, ♀. (p. 191.)
6. Dorsal view, $\times 4$.
7. Side view, $\times 4$.

Plate 56

PLATE LVI.

FIGS.

- 1-4. *Chondracanthus depressus* T. Scott, ♀. (p. 172.)
1. Antennule.
2. Mandible.
3. Foot of first pair.
4. Foot of second pair.
- 5-7. *Chondracanthus depressus*, var. *oblongus*, ♀. (p. 173.)
5. Antennule.
6. Foot of first pair.
7. Foot of second pair.
- 8-10. *Chondracanthus annulatus* Olsson, ♀ & ♂. (p. 169.)
8. ♀ Antennule.
9. Mandible.
10. ♂ Antennule.
- 11, 12. *Chondracanthus limandæ* Kröyer, ♀. (p. 174.)
11. Antennule.
12. Mandible.
13. *Chondracanthus zeii* De la Roche, ♀. Antennule.
(p. 177.)
- 14, 15. *Chondracanthus clavatus* Bassett-Smith, ♀. (p. 175.)
14. Antennule.
15. Mandible.
- 16-18. *Chondracanthus lophii* Johnston, ♀. (p. 179.)
16. Antennule.
17. Mandible.
18. Maxilla.

(Figures much enlarged.)

Plate 57

PLATE LVII.

FIGS.

- 1-7. *Lernæopoda cluthæ* T. Scott, ♀ & ♂. (p. 198.)
1. ♀ Antennule.
2. Antenna.
3. Mandible.
4. Maxilla.
5. First maxilliped.
6. ♂ First maxilliped.
7. Second maxilliped.
- 8-12. *Lernæopoda bidiscalis* W. F. de Visme Kane, ♀.
(p. 200.)
8. Antennule.
9. Antenna.
10. Mandible.
11. Maxilla.
12. First maxilliped.
- 13-17. *Lernæopoda elongata* (Grant), ♀. (p. 195.)
13. Antennule.
14. Antenna.
15. Mandible.
16. Maxilla.
17. First maxilliped.
- 18, 19. *Medesicaste usellinum* (Linn.), ♀. (p. 184.)
18. Antennule.
19. Mandible.

(Figures much enlarged.)

Plate 58

PLATE LVIII.

FIGS.

1-8. *Pandarus bicolor* Leach, ♂ (juv.), (= *Nogagus latus* T. Scott). (p. 95.)

1. Antennule.
2. Antenna.
3. First maxilliped.
4. Second maxilliped.
5. Foot of first pair.
6. Foot of second pair.
7. Foot of third pair.
8. Foot of fourth pair.

9-15. *Lernæopoda galei* Kröyer, ♀ & ♂. (p. 197.)

9. ♀ Antennule.
10. Antenna.
11. Mandible.
12. Maxilla.
13. ~~First~~ maxilliped. ♀
14. ~~Second~~ maxilliped. ♂
15. ♂ Second maxilliped. ~~ped.~~ *ae.*

16. *Lernæopoda cluthæ* T. Scott, ♂. (p. 198.)

16. Abdomen and caudal furca.

(Figures much enlarged.)

Plate 59

PLATE LIX.

FIGS.

1-6. *Lernæopoda salmonea* (Linn.). (p. 199.)

1. Female, dorsal view, $\times 12$.

2. The same, side view, $\times 12$.

3. Another specimen, ♀ adult, dorsal view, $\times 8$ (to shew variation).

4. The same, seen from the side, $\times 8$.

5. A female, somewhat immature, dorsal view, enlarged.

6. The same, seen from the side, enlarged.

7, 8. *Achtheres percarum* Nordmann, ♀. (p. 193.)

7. Dorsal view, much enlarged.

8. The same, seen from the side.

Plate 60

PLATE LX.

FIGS.

1-3. *Lernæopoda cluthæ* T. Scott. (p. 198.)

1. Female, dorsal view, $\times$ 8.

2. The same, seen from the side, $\times$ 8.

3. Male, seen from the side, $\times$ about 50.

4-6. *Lernæopoda galei* Kröyer. (p. 197.)

4. Female dorsal view, $\times$ 4.

5. The same, seen from the side, $\times$ 4.

6. Male, seen from the side, $\times$ about 50.

7. *Brachiella ovalis* (Kröyer), seen partly from the side,
 $\times$ about 12. (p. 210.)

Plate 61

PLATE LXI.

FIGS.

- 1, 2. *Lernæopoda bidiscalis* W. F. de Visme Kane. (p. 200.)
 1. Female, dorsal view, $\times$ about 6.
 2. The same, seen from the side, $\times$ about 6.
- 3, 4. *Lernæopoda elongata* (Grant). (p. 195.)
 3. Female, dorsal view, $\times$ 2·3.
 4. The same, seen from the side, $\times$ 2·3.
- 5, 6. *Lernæopoda similis* sp. n. (p. 202.)
 5. Female, dorsal view, $\times$ $10\frac{1}{2}$.
 6. The same, seen from the side, $\times$ $10\frac{1}{2}$.

Note.—Vol. I, p. 195, for Plate LXI, figs. 5, 6; read figs. 3, 4; and page 202, for Plate LXI, figs. 3, 4; read figs. 5, 6.

Plate 62

PLATE LXII.

FIGS.

1. *Brachiella trigla* Claus, ♀, ventral aspect, × 20.
(p. 209.)
2. *Brachiella insidiosa* Heller, ♀, side view, × 5.
(p. 206.)
3. *Brachiella rostrata* Kröyer, ♀, side view, × 5. (p. 205.)
- 4, 5. *Brachiella merlucii* Bassett-Smith, ♀, × 6. (p. 207.)
 4. Dorsal view.
 5. Side view.

Plate 63

PLATE LXIII.

FIGS.

1. *Lernæopoda galei* Kröyer, ♂, abdomen and caudal furca, $\times 26$. (p. 197.)
- 2-8. *Brachiella rostrata* Kröyer, ♀ & ♂. (p. 205.)
 2. ♀ Antennule.
 3. Antenna.
 4. Mandible.
 5. Maxilla.
 6. First maxilliped.
 7. ♂ First maxilliped.
 8. Second maxilliped.
- 9-16. *Brachiella insidiosa* Heller, ♀ & ♂. (p. 206.)
 9. ♀ Antennule.
 10. Antenna.
 11. Mandible.
 12. Maxilla.
 13. First maxilliped.
 14. ♂ Antenna.
 15. First maxilliped.
 16. Second maxilliped.
- 17-20. *Brachiella merluccii* Bassett-Smith, ♀. (p. 207.)
 17. Antennule.
 18. Mandible.
 19. Maxilla.
 20. First maxilliped.
- 21-25. *Brachiella triglæ* Claus, ♀. (p. 209.)
 21. Antennule.
 22. Antenna.
 23. Mandible.
 24. Maxilla.
 25. First maxilliped.
- 26-30. *Brachiella ovalis* (Kröyer), ♀. (p. 210.)
 26. Antennule.
 27. Antenna.
 28. Mandible.
 29. Maxilla.
 30. First maxilliped.

(Figures much enlarged.)

Plate 64

PLATE LXIV.

FIGS.

- 1-3. *Achtheres percarum* Nordmann, ♀. (p. 193.)
1. Anterior end, ventral aspect, shewing mouth-
appendages.
2. First maxillipeds, side view.
3. Second maxilliped, side view.
4-6. *Brachiella thynni* Cuvier. (p. 204.)
4. Male, seen from the side, $\times 30$.
5. Female, scarcely mature, head wanting, slightly
enlarged.
6. Female, adult, $\times$ about 3.
7. *Brachiella parkeri* G. M. Thomson, ♀, $\times 3\frac{1}{2}$. (p. 212.)
8. *Brachiella pastinacæ* P. J. van Beneden, ♀, $\times 10$.
(p. 211.)
9. *Brachiella bispinosa* Nordmann, ♀, $\times 7$, side view;
after Nordmann. (p. 211.)

(Figs. 1-3 and 9 after Nordmann; 4-6 after Steenstrup
& Lütken; 7 and 8 after Miss Bainbridge.)

2

♀

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Plate 65

PLATE LXV.

FIGS.

1. *Clavella brevicollis* (M. Edwards), ♀, side view, × about 20. (p. 220.)
- 2, 3. *Clavella uncinata* (O. F. Müller). (p. 214.)
 2. ♀, Side view, × about 7.
 3. ♂, Side view, × about 45.
4. *Clavella rugosa* (Kröyer), ♀, side view, × $4\frac{1}{2}$. (p. 216.)
A male is shewn attached to the cephalothorax.
5. *Clavella rugosa* (Kröyer), ♂, side view, × about 40.
6. *Clavella* (?) *uncinata*, ♀ (juv.), with two males attached to the abdomen, enlarged. (p. 214.)
7. *Clavella dubia*, T. & A. Scott, ♀, side view, × 7. (p. 217.)
- 8, 9. *Clavella stellata* (Kröyer), ♀. (p. 220.)
 8. Side view, shewing a section of the scale of the fish to which the adhesive disk of the *Clavella* is attached, × $4\frac{1}{2}$.
 9. Adhesive disk, enlarged.

Plate 66

PLATE LXVI.

FIGS.

- 1-7. *Clavella rugosa* (Kröyer), ♀ & ♂. (p. 216.)
1. ♀ Antennule.
2. Antenna.
3. Mandible.
4. Maxilla.
5. First maxilliped.
6. ♂ First maxilliped.
7. Second maxilliped.
- 8-11. *Clavella dubia* T. & A. Scott, ♀. (p. 217.)
8. Antennule.
9. Mandible.
10. Maxilla.
11. First maxilliped.
- 12-16. *Clavella brevicollis* (M. Edwards), ♀. (p. 220.)
12. Antennule.
13. Antenna.
14. Mandible.
15. Maxilla.
16. First maxilliped.
- 17-20. *Clavella emarginata* (Kröyer), ♀. (p. 218.)
17. Antennule.
18. Mandible.
19. Maxilla.
20. First maxilliped.
- 21-23. *Clavella uncinata* (O. F. Müller), ♀. (p. 214.)
21. Antennule.
22. Maxilla.
23. First maxilliped.

(Figures much enlarged.)

Plate 67

PLATE LXVII.

FIGS.

1-3. *Clavella scombri* (Kurz). (p. 218.)

1. Female, side view, $\times$ 12. A male is shewn attached to the cephalothorax.

2. Female, *in situ* on gill-arch of fish, $\times$ about 4.

3. Male, side view, $\times$ 56.

4-6. *Clavella paradoxa* (P. J. van Beneden). (p. 222.)

4. Female, dorsal view, $\times$ about 20.

5. Female, *in situ* on gill-filament of fish, $\times$ 5.

6. Male, side view, $\times$ 25.

Plate 68

PLATE LXVIII.

FIGS.

1-7. *Clavella scombri* (Kurz), ♀ & ♂. (p. 218.)

1. ♀ Antennule.

2. Antenna.

3. Mandible, apex shewing serrated edge.

4. Maxilla.

5. First maxilliped.

6. ♂ First maxilliped.

7. Second maxilliped.

8-14. *Clavella paradoxa* (P. J. van Beneden), ♀ & ♂. (p. 222.)

8. ♀ Antennule.

9. Antenna.

10. Mandible, apex shewing serrated edge.

11. Maxilla.

12. First maxilliped.

13. ♂ First maxilliped.

14. Second maxilliped.

15. *Clavella quadrata* Bassett-Smith, ♀, enlarged (after Bassett-Smith). (p. 223.)

(Figures much enlarged.)

Plate 69

PLATE LXIX.

FIGS.

- 1-3. *Clavella canthari* (Heller). (p. 224.)
 1. Female, dorsal view, $\times 9\cdot3$.
 2. The same, seen from the side, $\times 9\cdot3$.
 3. Male, seen from the side, $\times$ about 50.
- 4-6. *Clavella alata* Brian. (p. 225.)
 4. Female, dorsal view, $\times 15$.
 5. The same, seen from the side, $\times 15$.
 6. Male, seen from the side, $\times$ about 50.
7. *Clavella emarginata* (Kröyer) ♀, side view, $\times$ about 13. (p. 218.)

Plate 70

PLATE LXX.

FIGS.

- 1-13. *Kroyeria lineata* P. J. van Beneden. (p. 121.)
1. Female, dorsal view, $\times$ about 24.
 2. Antennule.
 3. Antenna.
 4. Mandible.
 5. Maxilla.
 6. First maxilliped.
 7. Second maxilliped.
 8. Foot of first pair.
 9. Foot of second pair.
 10. Part of genital segment, and abdomen seen from the side.
 11. One of the cephalic spines.
 12. Male, dorsal view, $\times$ about 24.
 13. One of the cephalic spines.

(Figures 2-11 and 13 greatly enlarged.)

Plate 71

PLATE LXXI.

FIGS.

1-12. *Eudactylina insolens* sp. n., ♀. (p. 135.)

1. Dorsal view, $\times 50$.

2. Side view, $\times 50$.

3. Antennule.

4. Antenna.

5. Mandible.

6. Maxilla.

7. First maxilliped.

8. Second maxilliped.

9. Foot of first pair.

10. Foot of second pair.

11. Foot of third pair.

12. Foot of fourth pair.

13. *Brachiella pastinaca* P. J. van Beneden, ♀, side view,
 $\times 10$. (p. 211.)

14. *Caligus pelamydis* Kröyer, ♂, dorsal view, $\times 24$. (p.
58.)

(Figures 3-12 greatly enlarged.)

Note.—Fig. 13 is not referred to in the text, as the specimen
was only recently obtained.

PLATE LXXII.

FIGS.

- 1-10. *Argulus foliaceus* (Linn.), ♀. (p. 227.)
1. Female, dorsal view, enlarged about $6\frac{1}{2}$ times.
 2. Antenna.
 3. Antennule.
 4. Mouth, side view.
 5. Siphon with retractile stylet.
 6. Second maxilliped.
 7. First swimming foot.
 8. Basiopodite of second foot.
 9. Basiopodite of third foot.
 10. Basiopodite of fourth foot.

(Figures 2-10 much enlarged.)

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