

REVIEW OF THE GENUS *SAEMUNDSSONIA* TIMMERMANN  
(PHTHIRAPTERA: PHILOPTERIDAE) FROM THE ALCIDAE  
(AVES: CHARADRIIFORMES), INCLUDING A NEW SPECIES AND  
NEW HOST RECORDS

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*Abstract.*—We describe the new species *Saemundssonina boschi* recently collected from Least Auklets (*Aethia pusilla* (Pallas)) in Alaska and review the 11 names previously applied to *Saemundssonina* Timmermann species from alcids. *Saemundssonina procax* (Kellogg and Chapman) is relegated to a new junior synonym of *S. grylle* (O. Fabricius), along with the previously recognized junior synonym *S. megacephalus* (Denny). The nine previously described valid species are redescribed and illustrated and four new host records are documented from alcids. Finally, a key is provided for the identification of the ten recognized species of alcid *Saemundssonina*.

*Key Words:* chewing lice, *Saemundssonina*, Phthiraptera, Philopteridae, Alcidae

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Recent fieldwork by DHC in Alaska yielded a series of lice from Least Auklets, *Aethia pusilla* (Pallas), and Crested Auklets, *A. cristatella* (Pallas). Examination of this material revealed a new species of *Saemundssonina* Timmermann from the Least Auklet. In describing this new species, we review the status of all 11 species-level names currently applied to the alcid lice of the genus *Saemundssonina*. We here redescribe the nine valid species, describe the new species, establish a new junior synonym and continue to recognize a previously established synonym, give four new host records, and provide a key for the identification of these ten species.

The material examined for this study is held in the following institutions: National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM); De-

partment of Biology, University of Utah, Salt Lake City (UU); University of Minnesota, St. Paul (UM); K. C. Emerson Museum, Oklahoma State University, Stillwater (OSU); Museum of New Zealand Te Papa Tongarewa, Wellington (MONZ); and Essig Museum of Entomology, University of California, Berkeley (UC).

Genus *Saemundssonina* Timmermann

*Saemundssonina* Timmermann 1936: 97.

Type species: *Docophorus gonothorax* Giebel, by original designation.

This large genus contains over 100 recognized species and subspecies, primarily from hosts in the avian order Charadriiformes and, to a lesser extent, from the orders Procellariiformes, Gruiformes, Pelecaniformes, and Anseriformes. Typical species of this genus appear much as in Fig. 2, with a

broad triangular head. The head bears a prominent dorsoanterior plate with a conspicuous darkly pigmented medioposterior process (Figs. 4–7). The abdomen is rounded, with at least tergites III–VIII divided at the midline. The abdominal sternum has only sparse chaetotaxy and lacks evident sclerites except for those associated with the terminalia. The male genitalia have a prominent pair of parameres, a large basal plate, and relatively complex mesosomal structures.

In our treatment of the ten species of alcid *Saemundsson*, we divide the species into three species groups. This separation is based on the chaetotaxy of the metanotal margin and the divided or undivided state of male tergite IX.

In the following descriptions, all measurements are in millimeters. Abbreviations are DPL, dorsoanterior head plate length; TW, temple width; HL, head length at midline including the hyaline margin; PW, prothorax width; MW, metathorax width; AWV, abdomen width at segment V; TL, total length; GL, male genitalia length from start of basal apodeme to tip of parameres. Figures of similar structures are shown at the same magnification: whole drawings (Figs. 2–3, 13–14) at 75 $\times$ , the dorsoanterior head plates (Figs. 4–7, 12, 15–17) at 125 $\times$ , and the male genitalia (Figs. 1, 8–11, 18–20) at 180 $\times$ . Host classification follows that of Sibley and Monroe (1990).

#### *wumisuzume* species group

The three species of this group are characterized by having the metanotal margin with 13–16 (usually 14) setae distributed across the segment (Figs. 2–3) and the male with undivided tergite IX.

#### *Saemundsson* *boschi* Price, Palma, and Clayton, new species

(Figs. 1–4)

Type host.—*Aethia pusilla* (Pallas).

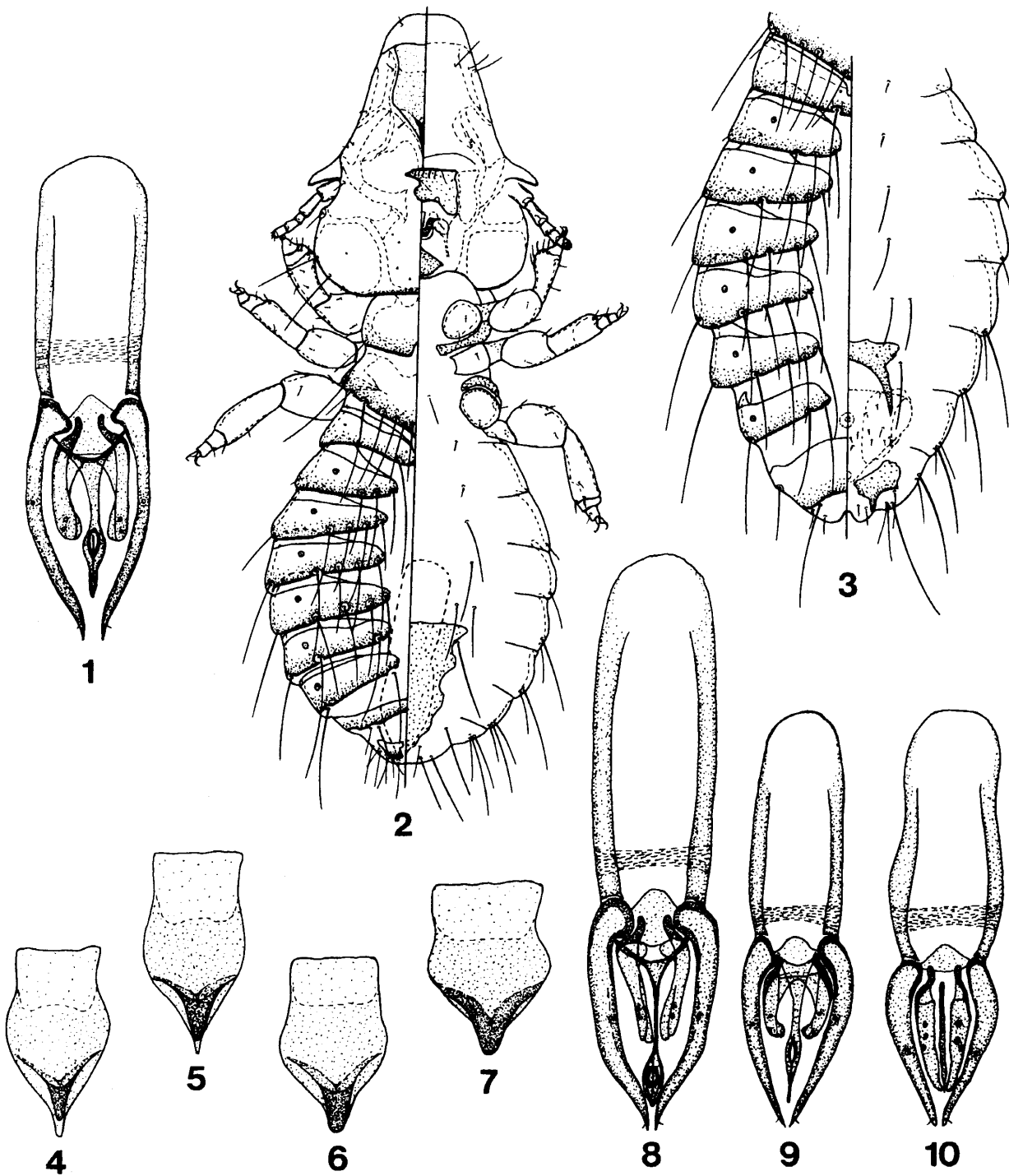
Male.—As in Fig. 2. Dorsoanterior head plate (Fig. 4) with posterior process seated within body of plate; DPL, 0.21–0.24. Ab-

domen (Fig. 2) with one or both sides with setae mediad of spiracle on tergite III, 3; IV–VI, 4; VII, 2; VIII, 1. Median sternal setae on each side of II–VII, respectively, short, short, long, long, 2 long, and long. Genitalia (Fig. 1) with slender, evenly curved parameres and mesosomal structures as shown. Dimensions: TW, 0.39–0.42; HL, 0.50–0.54; PW, 0.23–0.26; MW, 0.30–0.34; AWV, 0.46–0.58; TL, 1.34–1.44; GL, 0.34–0.38.

Female.—Similar to male. DPL, 0.24–0.28. Abdomen (Fig. 3) with setae mediad of spiracle on tergite VII, 3–4; VIII, 1–2. Dimensions: TW, 0.44–0.47; HL, 0.56–0.60; PW, 0.27–0.31; MW, 0.35–0.44; AWV, 0.61–0.85; TL, 1.70–1.93.

Type material.—Ex *A. pusilla*, the Least Auklet, holotype male in USNM, St. Lawrence Island, Alaska, 3–4 August 2001, LEAU 201, D. H. Clayton. Paratypes, all ex *A. pusilla*: 15 males, 9 females, same as holotype, but coded as LEAU 202, 203, 206, 207, 208, 210, 211, 212, 213, 216, 221, 222, and 224; 1 male, 1 female, St. Lawrence Island, Bering Sea, 2 June 1913, Brooks; 1 female, St. Paul Island, Alaska, 9 July 1964; 3 males, 3 females, Buldir Island, Aleutian Islands, Alaska, 12–15 July 1997, F. M. Hunter; 16 males, 8 females, same except August 1998; 7 males, 8 females, same except 20–30 July 2001, J. Haggelin; paratypes distributed among USNM, UU, UM, OSU, and MONZ.

Remarks.—This new species is distinguished from all other alcid *Saemundsson* by the combination of its large number of marginal metanotal setae distributed across the segment, most abdominal tergites IV–VI each with 4 setae mediad of the spiracle, its consistently small dimensions, and the unique male genitalia. The morphologically closest species to *S. boschi* appears to be *S. merguli* (Denny), but the latter has fewer marginal metanotal setae, a smaller and different-shaped dorsoanterior head plate, and a similar type of male genitalia but with a distinct apical in-



Figs. 1-10. 1-3, *Saemundssonina boschi*. 1, Male genitalia. 2, Dorsoventral male. 3, Female metanotal margin and dorsoventral abdomen. 4-7, Male dorsoanterior head plate (note darkly pigmented medioposterior process). 4, *S. boschi*. 5, *S. wumisuzume*. 6, *S. merguli*. 7, *S. montereyi*. 8-10, Male genitalia. 8, *S. wumisuzume*. 9, *S. merguli*. 10, *S. montereyi*.

ward flexion of the lateral mesosomal sclerites (Fig. 9 vs. Fig. 1).

Bosch (1983:269) was the first to recognize that the *Saemundssonina* from A.

*pusilla* represents a new species, but he reported his conclusion in abstract form only, without naming or describing the new louse. Our extensive search of the

subsequent literature has revealed no formal description of that new species. Moreover, Bosch (personal communication, January 2002) informed us he has not published the description of the new species or any further paper on the alcid *Saemundssonina*.

**Etymology.**—This new species is named after Dr. H. Bosch, Stuttgart, Germany, in recognition of his early observations on relationships within the alcid *Saemundssonina*.

*Saemundssonina wumisuzume* (Uchida)  
(Figs. 5, 8)

*Philopterus wumisuzume* Uchida 1949: 535. Type host: *Aethia cristatella* (Pallas).

**Male.**—Much as for *S. boschi*, except as follows. Dorsoanterior head plate as in Fig. 5; DPL, 0.21–0.27. Tergal setae mediad of spiracle on abdominal segment III, 3; IV–VI, 4 (rarely 5); VII, 2 (less often 3); VIII, 1. Genitalia (Fig. 8) with thickened parameres flexed near distal third and mesosomal structures as shown. Dimensions: TW, 0.43–0.47; HL, 0.52–0.58; PW, 0.27–0.31; MW, 0.35–0.41; AWV, 0.51–0.67; TL, 1.48–1.66; GL, 0.43–0.51.

**Female.**—Much as for *S. boschi*, except as follows. DPL, 0.23–0.29. Tergal setae mediad of spiracle on III, 3 (rarely 2 or 4); IV–VI, 4 (rarely 5); VII, 3–5; VIII, 1–2. Dimensions: TW, 0.48–0.52; HL, 0.58–0.64; PW, 0.30–0.33; MW, 0.40–0.46; AWV, 0.64–0.83; TL, 1.65–1.96.

**Material.**—Ex *A. cristatella*, the Crested Auklet, 63 males, 38 females, Alaska (25 host individuals). Ex *A. pygmaea* (Gmelin), the Whiskered Auklet, 57 males, 58 females, Alaska (50 host individuals).

**Remarks.**—This species is distinguished from other alcid *Saemundssonina*, except for *S. boschi*, by its metanotal and abdominal chaetotaxy. It is clearly separated from *S. boschi* by its unique male genitalia structure, including thicker flexed parameres and different shape of the median penis and lat-

eral mesosomal sclerites, and by its much larger dimensions.

Our abundant material from both the Crested Auklet and the Whiskered Auklet convinces us that the lice on these hosts are conspecific, and that they represent a species well apart from that found on the Least Auklet.

*Saemundssonina insolita* (Kellogg)

*Docophorus insolitus* Kellogg 1896: 94. Type host: *Ptychoramphus aleuticus* (Pallas).

**Male.**—Unavailable.

**Female.**—Similar to *S. boschi*, but with DPL, 0.20, and abdominal tergites III–VII each having only 3 setae mediad of spiracle.

**Material.**—Ex *P. aleuticus*, the Cassin's Auklet, 3 females (including syntype of *D. insolitus* in UC), California, British Columbia.

**Remarks.**—We were handicapped in fully determining the status of this species by the lack of male specimens. The females we examined had only 3 setae mediad of the spiracle on abdominal tergites III–VII, as illustrated by Kellogg (1896). We believe this difference, because it was consistent, is sufficient to justify continued recognition of *S. insolita* as a distinct species.

*merguli* species group

The four species of this group are characterized by having the metanotal margin with 10–12 (usually 12) setae distributed across the segment and the male with an undivided tergite IX.

*Saemundssonina merguli* (Denny)  
(Figs. 6, 9)

*Docophorus merguli* Denny 1842: 42. Type host: *Alle alle* (L.).

**Male.**—Dorsoanterior head plate as in Fig. 6; DPL, 0.19–0.20. One or both sides with setae mediad of spiracle on abdominal tergite III, 3; IV–VI, 4; VII, 2; VIII, 1. Sternal setae as for *S. boschi*. Genitalia (Fig. 9)

with slender evenly curved parameres and lateral sclerites of mesosome with apical portion distinctly flexed inwardly. Dimensions: TW, 0.41–0.43; HL, 0.49–0.53; PW, 0.26–0.28; MW, 0.31–0.35; AWV, 0.55–0.60; TL, 1.29–1.38; GL, 0.32–0.34.

Female.—Similar to male, except DPL, 0.20–0.22, and setae on each side of tergite VII, 3–4; VIII, 2 (rarely 1). Larger dimensions: TW, 0.45–0.48; HL, 0.53–0.59; PW, 0.29–0.31; MW, 0.37–0.41; AWV, 0.77–0.88; TL, 1.62–1.73.

Material.—Ex *A. alle*, the Dovekie, 6 males, 5 females, Faroe Islands, Newfoundland, Florida.

Remarks.—This is the first of four species that have only 12, less often 10 or 11, setae distributed across the metanotal margin, thereby differing from the preceding three species. While the male genitalia have similarities to both *S. boschi* and *S. wumisuzume*, additional differences associated with the dorsoanterior head plate and dimensions support these separations.

*Saemundssonina montereyi* (Kellogg)  
(Figs. 7, 10)

*Docophorus montereyi* Kellogg 1896: 87.

Type host: *Synthliboramphus antiquus* (Gmelin).

Male.—Much as for *S. merguli*. Dorsoanterior head plate as in Fig. 7; DPL, 0.18–0.21. Genitalia (Fig. 10) with evenly curved parameres but lacking protruding median penal structure. Larger dimensions: TW, 0.45–0.50; HL, 0.53–0.57; PW, 0.27–0.32; MW, 0.35–0.38; AWV, 0.58–0.64; TL, 1.38–1.52; GL, 0.32–0.37.

Female.—Much as for male. DPL, 0.20–0.22. Each side of tergite VII with only 3 (less often 2) setae mediad of spiracle. Large dimensions: TW, 0.50–0.56; HL, 0.57–0.62; PW, 0.30–0.33; MW, 0.40–0.43; AWV, 0.73–0.95; TL, 1.72–1.92.

Material.—Ex *S. antiquus*, the Ancient Murrelet, lectotype male, 19 male, 25 female paralectotypes of *D. montereyi* in UC, California; 1 female, Alaska. Ex *Brachy-*

*ramphus marmoratus* (Gmelin), the Marbled Murrelet, 4 males, 5 females, Alaska, California.

Remarks.—The conspicuously unique mesosomal structures of the male genitalia and the large dimensions, especially the temple width, enable reliable separation of this species from *S. merguli*.

*Saemundssonina fraterculae* (Overgaard)  
(Figs. 11–12)

*Docophorus fraterculae* Overgaard 1942:

10. Type host: *Fratercula arctica* (L.).

Male.—Dorsoanterior head plate as in Fig. 12; DPL, 0.21–0.25. Setae mediad of spiracle on abdominal tergite III, 2–3; IV, 4–5; V, 5–6; VI, 4–6; VII, 3–4; VIII, 1. Sternal setae close to those in Fig. 2, but with short seta on IV instead of long. Genitalia (Fig. 11) with stout evenly curved parameres and mesosomal details as shown. Dimensions: TW, 0.48–0.52; HL, 0.60–0.65; PW, 0.30–0.33; MW, 0.38–0.43; AWV, 0.66–0.71; TL, 1.61–1.77; GL, 0.40–0.45.

Female.—Similar to male. DPL, 0.20–0.23. Setae mediad of spiracle on abdominal tergite V–VI, 4–7; VIII, 1–2. Dimensions: TW, 0.53–0.57; HL, 0.61–0.66; PW, 0.34–0.37; MW, 0.43–0.45; AWV, 0.72–0.85; TL, 1.84–2.06.

Material.—Ex *F. arctica*, the Atlantic Puffin, 4 males, 4 females, Faroe Islands, Newfoundland. Ex *F. corniculata* (Naumann), the Horned Puffin, 1 female, Alaska. Ex *F. cirrhata* (Pallas), the Tufted Puffin, 1 male, 1 female, Alaska.

Remarks.—Overgaard (1942) provides such an excellent description of *S. fraterculae*, including the illustration of the male genitalia, that there is no doubt our material is representative of his species.

*Saemundssonina acutipecta* (Kellogg)

*Docophorus acutipectus* Kellogg 1896: 84.

Type host: *Cerorhinca monocerata* (Pallas).

Male.—Unavailable.

Female.—Essentially as for *S. fraterculae*, except single short median sternal seta on each side of II–V and short+long pair on VI–VII (much as in Figs. 13–14).

Material.—Ex *C. monocerata*, the Rhinoceros Auklet, 3 females (including "Type" of *D. acutipectus* in UC), Oregon, California.

Remarks.—Bosch (1983:269) suggested placing *S. fraterculae* as a subspecies of *S. acutipecta*. The only differentiating feature we note between the females of these two species involves an often difficult-to-discern sternal chaetotaxy. In view of this, and with the absence of a male of *S. acutipecta*, it seems premature to endorse his action at this time.

#### *grylle* species group

The three species of this group are characterized by having the metanotal margin usually with 3 setae on each side (less often 4 on one side), with a wide central space without setae (Figs. 13–14), and the male with tergite IX medially divided.

*Saemundssonina grylle* (O. Fabricius)  
(Figs. 13–15, 18)

*Pediculus grylle* O. Fabricius 1780: 218.

Type host: *Cephus grylle* (L.).

*Docophorus megacephalus* Denny 1842:

44. Type host: *Cephus grylle* (L.).

*Docophorus procax* Kellogg and Chapman 1899: 54. Type host: *Cephus columba* Pallas. **New synonymy.**

Male.—Dorsoanterior head plate (Fig. 15) unusually broad; DPL, 0.16–0.19. Abdomen as in Fig. 14. Setae mediad of spiracle on abdominal tergite III, 2; IV–VII, 3 (less often 4); VIII, 1. Single short median sternal seta on each side of II–V, median short+long setal pair on VI–VII. Genitalia (Fig. 18) with long curved parameres and median slender penis flanked by relatively short mesosomal sclerites each with 4 sensilla. Dimensions: TW, 0.47–0.50; HL,

0.51–0.53; PW, 0.29–0.30; MW, 0.36–0.40; AWV, 0.64–0.75; TL, 1.34–1.50; GL, 0.40–0.46.

Female.—Much as for male. Abdomen as in Fig. 13. Dimensions: TW, 0.51–0.57; HL, 0.54–0.59; PW, 0.31–0.34; MW, 0.41–0.46; AWV, 0.69–0.93; TL, 1.50–1.87.

Material.—Ex *C. grylle*, the Black Guillemot, 4 males, 6 females, Faroe Islands, Newfoundland, Labrador. Ex *C. columba*, the Pigeon Guillemot, 3 males, 16 females (including 5 female syntypes of *D. procax* in UC), Alaska, Oregon, California.

Remarks.—This species can be separated from the seven previously described species by its unique configuration of the metanotal marginal setae typical of this group. Each of the other two species of the *grylle* species group has a unique paramere and mesosomal genitalic structure, making them easy to distinguish from this species as well.

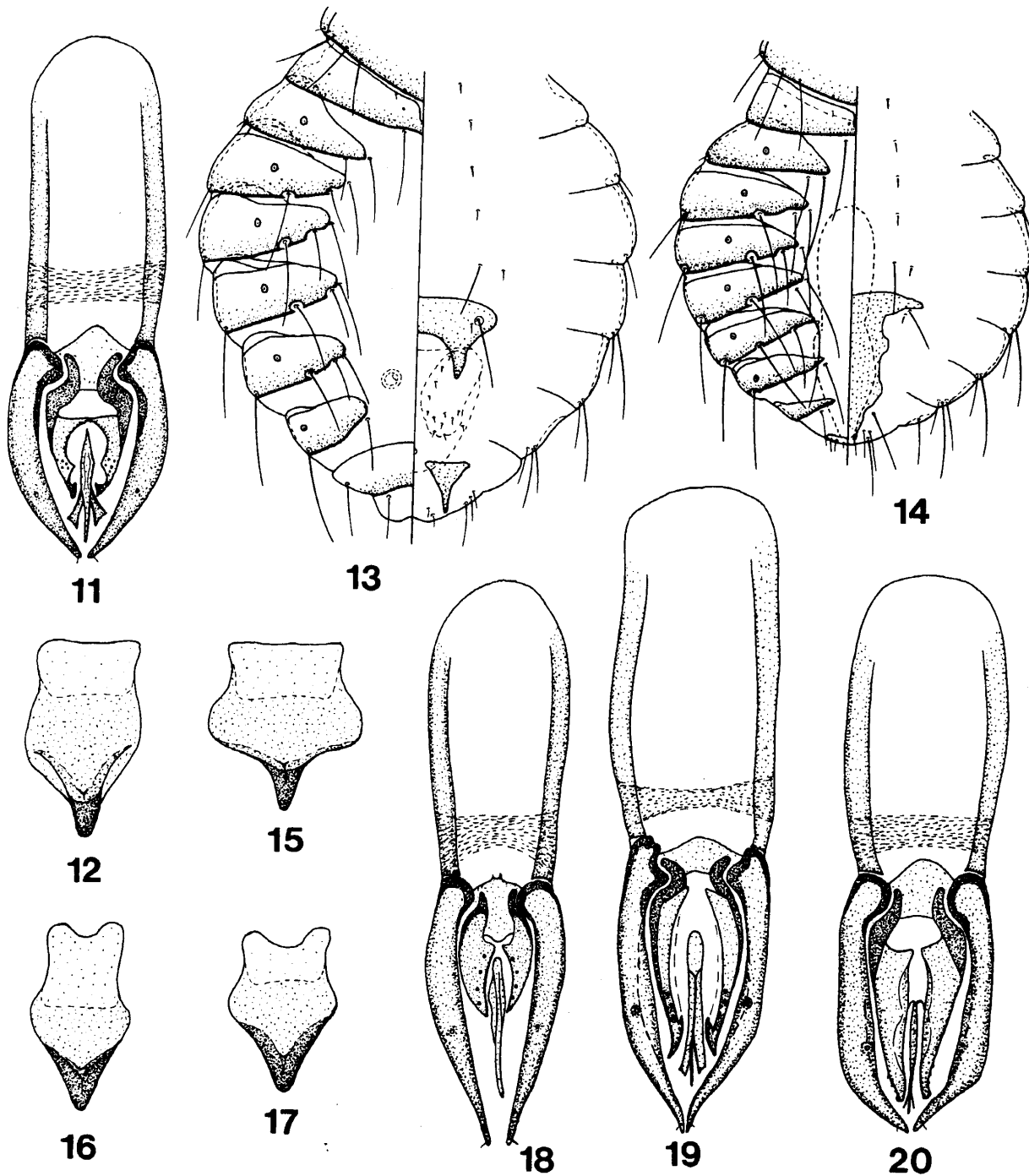
We concur with the earlier synonymy of *D. megacephalus* given by Hopkins and Clay (1952). Furthermore, our examination of *D. procax*, including syntype specimens, leaves us with no doubt that it, too, is a junior synonym of *S. grylle*. Bosch (1983) also concluded that *D. procax* was a junior synonym of *S. grylle*.

*Saemundssonina celidoxa* (Burmeister)  
(Figs. 16, 19)

*Docophorus celidoxus* Burmeister 1838: 426. Type host: *Alca torda* L.

Male.—Near *S. grylle*. Dorsoanterior head plate long, narrow (Fig. 16); DPL, 0.18–0.21. Abdominal tergite on VII with 2–3 setae mediad of each spiracle. Sternum VI with medium+long setal pair, VII with only single long seta. Genitalia (Fig. 19) large, with parameres and associated mesosomal sclerites as shown. Dimensions: TW, 0.48–0.51; HL, 0.53–0.55; PW, 0.30–0.35; MW, 0.38–0.42; AWV, 0.64–0.78; TL, 1.50–1.62; GL, 0.48–0.51.

Female.—Head as for male, but slightly larger. Abdomen as for *S. grylle*. Dimen-



Figs. 11–20. 11, 12, *Saemundssonina fraterculae*. 11, Male genitalia. 12, Male dorsoanterior head plate. 13, 14, *S. grylle*. 13, Female metanotal margin and dorsoventral abdomen. 14, Male metanotal margin and dorsoventral abdomen. 15–17, Male dorsoanterior head plate. 15, *S. grylle*. 16, *S. celidoxa*. 17, *S. calva*. 18–20, Male genitalia. 18, *S. grylle*. 19, *S. celidoxa*. 20, *S. calva*.

sions: TW, 0.53; HL, 0.59; PW, 0.36; MW, 0.40; AWV, 0.92; TL, 1.77.

Material.—Ex *A. torda*, the Razorbill, 6 males, 1 female, England, Labrador.

Remarks.—Representing the second of

three species with a similar marginal metanotal setal pattern, *S. celidoxa* is easily recognized by the shape of the dorsoanterior head plate and the unique genitalic details (Fig. 19 vs Figs. 18, 20).

*Saemundssonina calva* (Kellogg)  
(Figs. 17, 20)

*Docophorus calvus* Kellogg 1896: 79. Type host: *Uria aalge californica* (H. Bryant).

Male.—Also near *S. grylle*. Dorsoanterior head plate as in Fig. 17; DPL, 0.15–0.19. Abdominal tergites on IV–VII usually with 3 (less often 2 on one side) setae mediad of spiracle. Sternal setae as for *S. celidoxa*. Genitalia (Fig. 20) with parameres sharply flexed at distal fourth and with slender median penis flanked by stout elongate mesosomal sclerites. Dimensions: TW, 0.49–0.53; HL, 0.49–0.56; PW, 0.29–0.32; MW, 0.37–0.40; AWV, 0.62–0.73; TL, 1.33–1.54; GL, 0.43–0.49.

Female.—Much as for male. Abdominal tergites on IV–VII usually with 3 (rarely 2 or 4 on one side) setae mediad of spiracle. Sternal setae as for *S. grylle*. Dimensions: TW, 0.53–0.60; HL, 0.51–0.59; PW, 0.32–0.35; MW, 0.38–0.46; AWV, 0.77–0.92; TL, 1.54–1.84.

Material.—Ex *U. aalge* (Pontoppidan), the Common Murre, 8 males, 9 females (including female type and female paratype of *D. calvus* in UC), California, Alaska, Newfoundland, Greenland. Ex *U. lomvia* (L.), the Thick-billed Murre, 7 males, 11 females, Alaska (11 host individuals), Maine, Faroe Islands, Newfoundland.

Remarks.—This is the last of the three species of the *grylle* species group. As stated earlier for each of the other two species of this group, the best distinguishing feature is the unique structure of the male genitalia.

KEY TO THE SPECIES OF *SAEMUNDSSONIA*  
FROM THE ALCIDAE

1. Metanotal margin with only 6–7 setae, without any in median area (Figs. 13–14); *grylle* species group . . . . . 2
- Metanotal margin with 10–16 setae, distributed across segment (Figs. 2–3) . . . . . 4
2. Dorsoanterior head plate broad (Fig. 15); male genitalia as in Fig. 18; ex *Cephus* (guillemots) . . . . . *grylle* (O. Fabricius)

- Dorsoanterior head plate narrow (Figs. 16–17); male genitalia as in Figs. 19 or 20 . . . . . 3
- 3. Male genitalia as in Fig. 19, with slender curved parameres; ex *Alca* (Razorbill) . . . . . *celidoxa* (Burmeister)
- Male genitalia as in Fig. 20, with broad, sharply flexed parameres; ex *Uria* (murre) . . . . . *calva* (Kellogg)
- 4. Usually with 12 marginal metanotal setae, less often 10 or 11; *merguli* species group . . . . . 5
- Usually with 14 marginal metanotal setae, less often 13, 15 or 16; *wumisuzume* species group . . . . . 8
- 5. Female temple width <0.49; male temple width <0.44; male genitalia as in Fig. 9, with short, blunt, inwardly curved lateral mesosomal sclerites; ex *Alle* (Dovekie) . . . . . *merguli* (Denny)
- Female temple width >0.49; male temple width >0.44; male genitalia as in Figs. 10 or 11, with longer different-shaped lateral mesosomal sclerites (male unavailable for *S. acutipecta*) . . . . . 6
- 6. Long median sternal setae on abdominal segments IV–V (as in Fig. 2); male genitalia as in Fig. 10; ex *Synthliboramphus* and *Brachyramphus* (murrelets) . . . . . *montereyi* (Kellogg)
- Short median sternal setae on abdominal segments IV or IV–V (as in Fig. 14); male genitalia otherwise . . . . . 7
- 7. Long median sternal setae on segment V; male genitalia as in Fig. 11; ex *Fratercula* (puffins) . . . . . *fraterculae* (Overgaard)
- Short median sternal setae on segment V; male unavailable; ex *Cerorhinca* (Rhinoceros Auklet) . . . . . *acutipecta* (Kellogg)
- 8. All abdominal tergites IV–VI each with 3 setae mediad of spiracle; male unavailable; ex *Ptychoramphus* (Cassin's Auklet) . . . . . *insolita* (Kellogg)
- Most of abdominal tergites IV–VI each with 4–5 such setae . . . . . 9
- 9. Female temple width not >0.47; male temple width not >0.42; male genitalia (Fig. 1) <0.40 long, with slender evenly curved parameres; ex *Aethia pusilla* (Least Auklet) . . . . . *boschi* n. sp.
- Female temple width at least 0.48; male temple width at least 0.43; male genitalia (Fig. 8) >0.42 long, with broad, flexed parameres; ex *Aethia cristatella* (Crested Auklet) and *A. pygmaea* (Whiskered Auklet) . . . . . *wumisuzume* (Uchida)

DISCUSSION

Table 1 shows the host list for the known alcid *Saemundssonina*. Using the host sequence given by Sibley and Monroe (1990), it is interesting that the three louse species of the *wumisuzume* species group cluster together, as do also the three species of the



Table 1. Host list for the alcid *Saemundssonina*.

Host Species <sup>(1)</sup>	Louse Species
<i>Alle alle</i>	<i>merguli</i> <sup>(a)</sup>
<i>Alca torda</i>	<i>celidoxa</i> <sup>(b)</sup>
<i>Uria lomvia</i>	<i>calva</i> <sup>(b)</sup>
<i>Uria aalge</i>	<i>calva</i> <sup>(b)</sup>
<i>Cephus grylle</i>	<i>grylle</i> <sup>(b)</sup>
<i>Cephus columba</i>	<i>grylle</i> <sup>(b)</sup>
(*) <i>Brachyramphus marmoratus</i>	<i>montereyi</i> <sup>(a)</sup>
<i>Synthliboramphus antiquus</i>	<i>montereyi</i> <sup>(a)</sup>
<i>Ptychoramphus aleuticus</i>	<i>insolita</i> <sup>(c)</sup>
<i>Aethia cristatella</i>	<i>wumisuzume</i> <sup>(c)</sup>
(*) <i>Aethia pygmaea</i>	<i>wumisuzume</i> <sup>(c)</sup>
<i>Aethia pusilla</i>	<i>boschi</i> n.sp. <sup>(c)</sup>
<i>Cerorhinca monocerata</i>	<i>acutipecta</i> <sup>(a)</sup>
<i>Fratercula arctica</i>	<i>fraterculae</i> <sup>(a)</sup>
(*) <i>Fratercula corniculata</i>	<i>fraterculae</i> <sup>(a)</sup>
(*) <i>Fratercula cirrhata</i>	<i>fraterculae</i> <sup>(a)</sup>

<sup>(1)</sup> Host names and sequence from Sibley and Monroe (1990).

<sup>(a)</sup> *merguli* species group.

<sup>(b)</sup> *grylle* species group.

<sup>(c)</sup> *wumisuzume* species group.

(\*) New host records.

*grylle* species group. Principal discontinuities are shown only for the four species of the *merguli* species group, with one species appearing in the first position, one species in the middle, and two species in the last position.

The abstract provided by Bosch (1983) did not come to our attention until we had already finalized our taxonomic decisions for the alcid *Saemundssonina*. It is encouraging that our conclusions are, for the most part, consistent with what he found. Unfortunately, Bosch never published his work beyond this abstract and, therefore, none of his findings was formalized.

Waterston (1915) emphasized the significance of the louse male genitalia in species recognition by providing excellent illustrations for the genitalia of five species of auk *Saemundssonina*. Our illustrations are consistent with his.

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