

[Short Paper]

New Records of the Parasitic Copepod *Salmincola stellatus* from Sakhalin Taimen (*Hucho perryi*) in Hokkaido, with a Note on Its Attachment Site

Kazuya NAGASAWA*¹ and Shigehiko URAWA*²

Salmincola stellatus is a lernaepodid copepod parasitic on salmonids of the genus *Hucho*. Markevich¹⁾ described this species taken from Siberian taimen, *H. taimen* [=*H. hucho taimen* (Pallas, 1773)], from a market in Vladivostok, eastern USSR. In 1986, a half century after that original description, Kabata²⁾ redescribed this copepod based on the ovigerous female specimens discovered from Sakhalin taimen, *H. perryi* (Brevoort, 1856), from Hokkaido, Japan. Although *S. stellatus* has been frequently cited (e.g., Kabata³⁾), there are virtually only two published records and little is known about its geographical distribution, life history, and ecology. Moreover, since *H. perryi* has been regarded as one of endangered species in Japan, there are few chances to examine the parasites of this rare salmonid.

Recently a total of 41 *H. perryi* was made available for parasitological examination and we obtained some data on prevalence, intensity, and attachment site of *S. stellatus*. The known

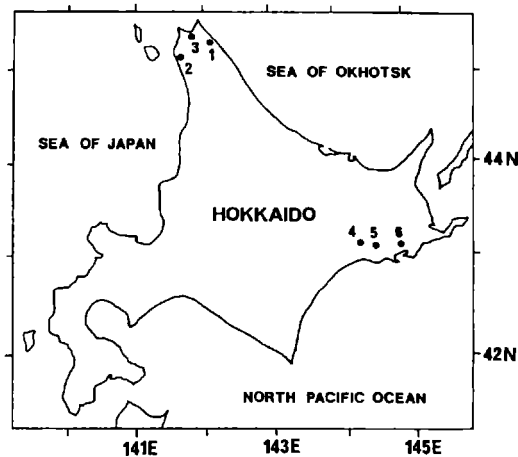


Fig. 1. Map of Hokkaido showing collection localities for *Hucho perryi*. 1, Sarufutsu River; 2, Sarobetsu River; 3, Koetoi River; 4, Otsu Fish Farm; 5, Lake Toro; 6, Bekaubeushi River.

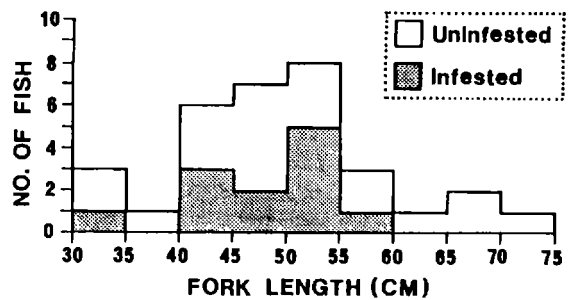


Fig. 2. Size frequency distribution of *Hucho perryi* from the Sarufutsu River.

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*¹Hokkaido Fisheries Experimental Station, 238 Hamanaka-cho, Yoichi, Hokkaido 046, JAPAN (長澤和也: 北海道立中央水産試験場).

*²Hokkaido Salmon Hatchery, Fisheries Agency of Japan, 2-2 Nakanoshima, Toyohira-ku, Sapporo 062, JAPAN (浦和茂彦: 水産庁北海道さけ・ますふ化場).

parasites of *H. perryi* in Japan have been listed earlier⁴⁾ and some of nematode parasites from our material of *H. perryi* have been described elsewhere.^{5,6)}

Materials and Methods Forty-one *H. perryi*, with a fork length (FL) range from 16.2 to 73.8 cm, were taken from six localities in Hokkaido (Fig. 1): 32 from the Sarufutsu River on August 1, 1986; two from the Sarobetsu River on September 27, 1980; one from the Koetoi River on September 28, 1980; one from the Otsu Fish Farm, Tsurui-mura, on May 10, 1977 (this fish had strayed to the farm from the Ashibetsu River, a tributary of the Kushiro River); one from Lake Toro on July 10, 1981; and three from the Bekanbeushi River on June 23, 1982 and April 23, 1983. The fish were deeply frozen or fixed in 10% formalin and brought to the laboratory. The body surface, gills, fins, buccal (oral) and branchial cavities were examined and, when copepods were found, their attachment sites were recorded.

The scientific and English names of *Hucho* spp. are those listed by Holcik et al.⁷⁾ Voucher specimens of *S. stellatus* have been deposited in the National Science Museum, Tokyo (NSMT-Cr 10957) and additional specimens retained in the personal collection of the junior author (S. Urawa).

Results and Comments Eleven (34.4%) of the 32 *H. perryi* from the Sarufutsu River were infested with 17 adult female *S. stellatus* with an intensity range of 1-3 (mean 1.5). The infested fish ranged in FL from 34.8-55.2 cm (Fig. 2). Also, two adult female *S. stellatus* were found on one *H. perryi* from the Otsu Fish Farm. These findings constitute both the second record of *S. stellatus* from *H. perryi* in Hokkaido and the first record from wild populations of this salmonid. However, the fish from the other localities were not infested.

As to the site of infestation, all specimens of adult female *S. stellatus* were attached to the walls of the buccal cavity. Of the 17 Sarufutsu River specimens, 11 and 6 were found near the teeth of the roof and floor of the buccal cavity, respectively (Fig. 3). No other sites such

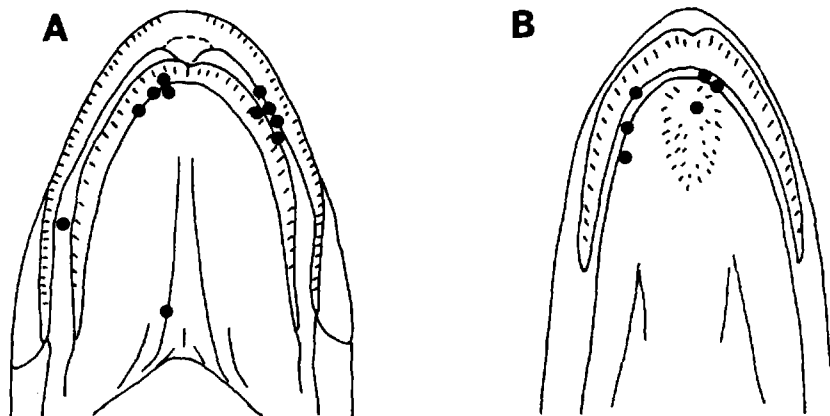


Fig. 3. Distribution (solid circles) of *Salmincola stellatus* on the roof (A) and floor (B) of the buccal cavity of *Hucho perryi* from the Sarufutsu River.

as the body surface, fins, gills, and branchial cavity were infested. Thus, adult female *S. stellatus* shows a site preference to the buccal cavity, not to the skin as reported by Kabata²⁾. When *S. stellatus* was originally described, the attachment site was recorded as unknown¹⁾.

In addition, although Kabata²⁾ reported that his material was obtained in "a hatchery", the host fish were in fact from the Sun Piazza Aquarium, Sapporo, Hokkaido (T. Awakura, Hokkaido Fish Hatchery, and N. Okada, Sun Piazza Aquarium, personal communications; also see Nagasawa et al.⁴⁾, p. 40 footnote).

Acknowledgements We are grateful to Dr. K. Ogawa, University of Tokyo, and Dr. T. Shimazu, Nagano-ken Junior College, for supplying the material of *S. stellatus*. Thanks are also due to Dr. Z. Kabata, Pacific Biological Station, Canada Department of Fisheries and Oceans, for assistance in obtaining literature, and to Dr. T. Awakura, Hokkaido Fish Hatchery, and Mr. N. Okada, Sun Piazza Aquarium, for information on *S. stellatus* in Hokkaido.

References

- 1) Markevich, A. P. (1936): *Inst. Zool. Biol. AN Ukr. SSR, Zbirnik Prats Zool. Mus.*, (17), 103-105. (In Ukrainian).
- 2) Kabata, Z. (1986): *Can. J. Zool.*, **64**, 1852-1859.
- 3) Kabata, Z. (1969): *J. Fish. Res. Board Can.*, **26**, 2987-3041.
- 4) Nagasawa, K., S. Urawa, and T. Awakura (1987): *Sci. Rep. Hokkaido Salmon Hatchery*, (41), 1-75.
- 5) Moravec, F. and K. Nagasawa (1989a): *Folia Parasitol.*, **36**, 127-141.
- 6) Moravec, F. and K. Nagasawa (1989b): *Folia Parasitol.*, **36**, 143-151.
- 7) Holcik, J., K. Hensel, J. Nieslanik, and L. Skacel (1988): The Eurasian huchen, *Hucho hucho*. Largest salmon of the world. Dr. W. Junk Publ., Dordrecht, xiv+239 p.

北海道産イトウからの寄生性カイアシ類 *Salmincola stellatus* の新記録と寄生部位について

長澤和也・浦和茂彦

北海道の猿払川，サロベツ川，声間川，鶴居村大津養魚場，塘路湖および別寒辺牛川で採集したイトウ41尾を調べ，猿払川と大津養魚場から得たイトウにカイアシ類の一種，*Salmincola stellatus*の寄生を認めた。これは，本寄生虫のわが国における第2番目の記録であると同時に，北海道産野生イトウからの最初の記録である。また，本種は皮膚に寄生すると報告されていたが，寄生部位は口腔壁であることが判明した。なお，Kabata (1986)は北海道産イトウから本種を再記載した際，宿主の採集場所を「孵化場」と記したが，それはサンピアザ水族館（札幌市）の誤りであることを指摘した。