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***MODERN ACHIEVEMENTS IN POPULATION,
EVOLUTIONARY AND ECOLOGICAL GENETICS
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ABSTRACTS

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Rybnikova et al., 1989) and North America (Grant, Utter, 1984, Jorstad et al., 1994). All this define the importance of the report.

The variability at 7-10 allozyme loci and of 3 morphobiological characters in collections of 16 and 27 samples from spawning populations of Pacific herring in the Sea of Japan and Okhotsk Sea is analysed by methods of multidimensional statistics and conventional population genetic techniques. Comparative genetic analysis performed on literature data for other Pacific basins. Main conclusions are as follow: 1. The Pacific herring have definite population genetic structure; 2. In two examined seas (the Sea of Japan and Okhotsk Sea) there are several population gatherings which may be considered as genetically distinct local stocks; 3. Local stocks of Pacific herring are subdivided or genetically heterogeneous populations; 4. It is possible to consider as self-reproducing units (= subdivided populations) the following gatherings: (1) Regional populations of waters in Primorye and in Sakhalin Bay, (2) Pool of populations of Sakhalin-and-Hokkaido herring, (3) Pool of regional populations in the North-and-East Sakhalin and Tunaycha Lake; 5. Ecological groups of Pacific herring are not self-reproducing population genetic units. The ecological groups may include representatives of different local stocks.

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NOVEL MAINTENANCE MODE OF THE B CHROMOSOMES IN *APODEMUS PENINSULAE* FROM 4 AREAS BORDERING ON THE SEA OF JAPAN

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The B chromosomes of *Apodemus peninsulae* from Primorsky Krai and Sakhalin Island (Russia), Gyeonggi Do (Korea) and Hokkaido (Japan) were examined in detail by conventional staining and G-, C- and fluorochrome-banding, paying special attention to the maintenance mode in each of their populations. The B chromosomes, identified by deeply C-stained properties, were observed in the bone marrow cells of all specimens from the three areas, but not in Sakhalin, where no B chromosome was detected at all. Interestingly, four of the seven specimens from Sakhalin showed an ordinary response to the in vitro growth of the tail tissues, and the growing fibroblasts (mostly diploid) had no B chromosome. On the contrary, the remaining three

specimens showed a markedly delayed response to the same in vitro system, and the growing fibroblasts were all polyploid even in the primary cultures, and always carried B chromosomes.

The B chromosomes, irrespective of bone marrow cells or tail fibroblasts, were morphologically divided into two groups; medium-to-small biarmed B chromosomes and dot-like micro B chromosomes. The former contained GC-rich heterochromatin in the centromere regions and AT-rich heterochromatin in the arm regions, whereas the latter were wholly GC-rich. All specimens from the four areas had 48 acrocentric A chromosomes (46 autosomes and sex chromosomes XX or XY). In addition to these A chromosomes, the Hokkaido population carried both biarmed and micro B chromosomes, whereas the Primorsky Krai and Gyeonggi Do populations only biarmed ones. The Sakhalin specimens are quite unique in that the B chromosomes become visible after polyploidization in the tail culture system.

**ALLOZYMES AND mtDNA
DESCRIBE ECOLOGICAL
RELATIONSHIPS OF
POPULATIONS OF EVEN-YEAR
PINK SALMON INHABITING
PRINCE WILLIAM SOUND,
ALASKA**

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Allozyme and mtDNA data were obtained from pink salmon throughout Prince William Sound (PWS) Alaska from two hatchery, five upstream and 20 tidal locations distributed among five management regions (Southeast, East, North, Southwest, Montague). Screening for allozymes included 77 loci for up to 100 fish per sample, where 38 loci having alternate allele frequencies >0.01 in one or more collections were used for population analyses. Screening for mtDNA haplotypes involved the ND5/ND6 region using 6 restriction enzymes and 40 fish per collection where 8 haplotypes were detected.

Despite shallow structuring, significant and apparently stable differences detected by both data sets permit rejecting a null hypothesis of panmixia and support managing native populations in PWS at the regional level.