(T. Nemoto)

## Ecology and population dynamics of krill

## Main research program items and remarks

1. Population parameters of krill such as,

Structures of swarms, age, sex ratio, maturity, copulation, etc.

Annual, seasonal and local variation of structures.

Variation at different stock levels (natural and result of fisheries).

2. Population biomass estimates of krill from,

Survey by net or trawl.

Acoustic scanning.

Multi-colour, photography.

Satellite imagenary.

Catch result and catch effort.

Marking of individuals and stocks.

3. Studies of sub-population by,

Morphology.

Cytological analysis.

Marking.

Biological assessment.

4. Studies of environment of,

Physical and chemical structures of the sea to form swarming.

Condition of spawning place.

Environmental effects for development of krill.

5. Experimental studies both in land and on board laboratories in,

Large plant.

Behaviour Ecology of swarm Experimental maintenance.

Metabolism Energy budget Physiology

- 6. Special studies in winter time on, Primary productivity as the nutrition of krill. Distribution and growth rate. Feeding.
- 7. Tropho-dynamic studies around krill of, Primary productivities. Population studies of larger predators and their predation. Food and feeding of krill.
- 8. International activities in relation to,

  IBESO (proposed at Montreal; International Biological

  Expedition of the Southern Ocean).

Establishment of information center or system for Standardization of catch statistics and effort and distribution of materials.

Arrangement of any meeting, scientific and coordination.