

References

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13. Condition of plankton at IOBC — D. J. Tranter.

Samples from the International collections at the Indian Ocean Biological Centre (IOBC) have been compared with that of "Duplicate" material collected by National Laboratories, these collections being made during the International Indian Ocean Expedition (1962-65). The Copepoda were chosen as a convenient and sufficiently representative taxon for detailed study. From each sample the condition of 100 copepods was examined with respect to four criteria: Dissolution of tissue (D), Body rupture (R), Fractionation of antennae (A), and Loss of legs (L). Thus quantitative descriptions were made of the condition of each sample.

The condition of duplicate samples from National Laboratories was compared with that of material sorted from the International collections as well as that of unsorted archives. A total of 396 collections were examined yielding more than 100 comparisons. The samples involved represent more than 5% of the International collections. They were so chosen as to yield, with minimum bias the maximum information about factors likely to influence plankton condition. The samples chosen were collected by 5 ships coded A-E, and were processed by 4 technicians coded F, G, H, and K. The influence of the following factors was investigated: Ship, Date of collection, Preservative, Container, Sample size, Date of processing, Sorting duration and Technician.

A preliminary analysis of the results led to the following tentative conclusions:

1. The collections made by National Laboratories during the International Indian Ocean Expedition are generally sound but their condition shows some variation from ship to ship, particularly with respect to dissolution of soft tissues (15-49%).
2. Compared with the duplicates held by National Laboratories, the International collections show further deterioration particularly, dissolution of soft tissue (66%).
3. The unsorted archives at IOBC are not in much better condition than the sorted material (taxon) the difference in the dissolution factor being less than 3%. This shows that the deterioration observed did not result from stress during sorting, but must have resulted from some treatment common to both archive and taxon which took place prior to sorting.
4. Consequently there was little significant difference in the condition of samples sorted by different technicians, though one technician in particular may have exercised more care than the other three whose samples were included in the analysis. Nor was there much relation between the deterioration observed and the duration of sorting.

5. The deterioration observed in the International collections is not related to the size of the original samples.
6. Those samples which were processed at IOBC during the early part of 1964 and the latter part of 1965 show more deterioration relative to duplicates held by other laboratories than those which were processed during the latter part of 1964 and the early part of 1965. The difference can be traced to the year in which these samples were collected, those collected in 1962 and 1965 showing more deterioration relative to duplicates held abroad than those collected in 1963 and 1964.
7. When the difference due to year of collection is further examined it can be seen that this is related to the ships which made the collections. The samples from ships A and E which made collections in 1962 and 1965 respectively, show more deterioration relative to Duplicates held abroad than do samples from ships B, C, and D which were taken in 1963 and 1964.
8. Similarly although there may appear to be differences in deterioration related to the buffer used in the preservative and the nature of the container used to store the plankton, these are derived rather from the "ship effect".
9. The deterioration observed in the International collections due to the "ship effect" was greater for those samples whose duplicates in National Laboratories are in best condition and vice versa. This suggests that all the samples received at IOBC were exposed to some common stress which acted universally to reduce a previously variable level of condition to a universal low.
10. The variability between the condition of duplicates from the ship and another seems to be due less to the nature of the preservative, buffer or container used than to the fact that some had their biomass determined twice (Ship B), some once (Ship C & D) and some not at all (A & E).
11. Because all samples received at IOBC had their displacement volume measured again irrespective of their past history, some of the deterioration observed could be due to the stress of biomass determination.

14. *Folsom Splitter Accuracy* — T. C. Gopalakrishnan

Doubt has arisen whether the Folsom plankton splitter is a satisfactory instrument to obtain equivalent subsamples from a plankton sample and experiments were conducted to test this technique of subsampling. Tests showed that the Folsom plankton splitter fails to mix heavy and floating planktonic forms homogeneously. Along with this subsampler a modified version of it with a mixing device was also tested. The new version produces better mixing as a result of the presence of bafflers in the container introduced for this purpose. The preliminary counts made indicate that this simple device would seem to ensure proper mixing without damaging the specimens. Now this technique is in use at IOBC.

15. *Modified Wiborg Plankton Splitter* — B. Kimor, R. Pasteur, V. Berdugo.

B. Kimor mentioned that a modified version of the Wiborg plankton splitter (Wiborg 1951) is being successfully used for this purpose in the plankton laboratory of the Sea Fisheries Research Station, Haifa.