

USE OF CHILLED WATER IN PRAWN PROCESSING WORK

A COMPARATIVE study of the effect of using chilled water and tap-water during the various stages of processing of prawn has been made. Five pound blocks of backwater and sea prawns in the headless and peeled and deveined forms were frozen using chilled water below 6° C. and tap-water at or below 25° C. at all the stages of preparation of the products. These were separately sampled at different stages, viz., before washing, after washing, after packing in trays and after freezing for total bacterial plate counts. The washing time usually varied between 5 and 10 minutes, the interval between washing and packing being 30 minutes and that between packing and freezing about one hour during which the trays were kept in a chill storage. For comparison the total bacterial plate counts of frozen products prepared from the same batch using the two types of water are presented in the histogram (Fig. 1).

processing of prawns helps in keeping down the bacterial load in the final frozen product. It has also been demonstrated to the trade that adoption of this improved processing technique presents no practical difficulties under commercial freezing conditions.

Central Fisheries Technological V. K. PILLAI
Research Station, A. LEKSHMY.
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THE ARCHEGONIAL COMPLEMENT OF *BOTRYCHIUM LANUGINOSUM* WALL. EX HOOK. ET GREV.*

THERE appears to be some difficulty in demonstrating the presence of the ventral canal cell in the archegonial complement of Ophioglossaceæ. This is specially so in the case of *Botrychium*, as can be seen from the views expressed by the previous workers on that genus. The ventral canal cell is ascribed to be ephemeral, very inconspicuous and impossible to detect and hence its very formation itself is doubted.

Jeffrey (1898) figures a very evident ventral canal cell whose nucleus is much smaller than that of the egg or the neck canal cell. He says further, that one rarely finds this canal cell intact, as it quickly disintegrates and in preserved material, at any rate, is represented by an indistinct mass thrust against the wide base of the cervical canal. Bruchmann (1906) was unable to find a ventral canal cell in *B. lunaria* nor did he apparently see the division of the nucleus of the neck canal cell. Campbell (1911) found the ventral canal cell of *B. virginianum* as that of *Ophioglossum* very inconspicuous and often impossible to detect. He could not demonstrate satisfactorily the presence of ventral canal cell in *B. obliquum* although several preparations were secured which indicated that ventral canal cell—at least a nucleus representing this—was present. There was, however, one case where, in close contact with the nucleus of the central cell, a second smaller nucleus was visible and a zone of somewhat denser cytoplasm but no evident cell-wall. A similar difficulty has been experienced in his investigations of other Ophioglossaceæ (Campbell, 1921). It seems probable that in these cases, the ventral canal cell is cut off very soon before the opening of the archegonium and almost immediately ejected. It is not unlikely that there may be no division wall formed and that the ventral canal cell is represented by a nucleus.

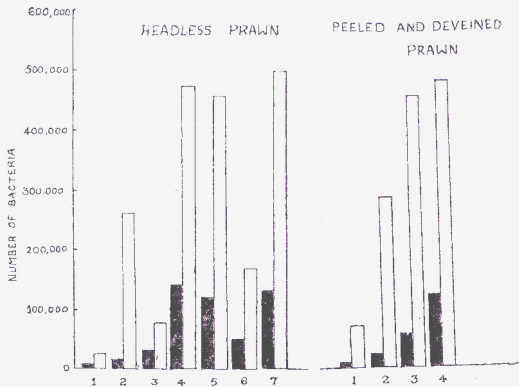


FIG. 1. Histogram showing the difference in the total bacterial plate count of the same samples of headless, and peeled and deveined prawn treated with tap-water and ice-cold water.

It has been noted that there is a uniform reduction in the bacterial counts of the material as a result of washing irrespective of the type of water used. However, samples washed in tap-water show considerable increase in the bacterial counts during the interval between washing and packing, whereas the changes in bacterial counts over the same period in samples treated with chilled water are not significant. There is also wide disparity between the bacterial counts of the two sets of samples washed and glazed with chilled water and tap-water respectively, after freezing (vide histogram). It can, therefore, be concluded that the use of chilled water during different stages of