

instance, that a high temperature is required for the development of the oyster larvæ, and that along the Scandinavian coast it is only in the so-called pools that reproduction on any large scale takes place. Most probably the same is the case with many other inhabitants of the pools. The eggs and larvæ of the lobster are only developed during the warmest part of the year, though the female often carries spawn in winter, and it has been found by experiment that a fall of a few degrees in temperature is sufficient to retard the development of the larvæ several weeks. We can understand, therefore, why these forms do not live in arctic or boreo-arctic areas. Even though the fertile eggs or larvæ of boreal forms do not demand a higher temperature for their development, additional warmth may nevertheless be absolutely essential for the production and development of the ova within the mother's body. This, again, limits the distribution of many forms. The converse naturally holds good, and the development and other physiological processes of forms living exclusively in arctic waters can only take place at a low temperature.

We have already seen that many species are common to both boreal and purely arctic areas, and we must ascribe their widespread distribution to their power of adapting themselves to very different temperatures. Most likely we are dealing here with physiologically distinct species, even though the differences do not appear in corresponding morphological alterations in bodily structure. Not that differences of this latter kind are by any means excluded, as I have previously shown how a species may vary morphologically in certain directions, according as it occurs in arctic or boreal tracts. Future researches regarding the time when reproduction begins in these widespread forms in the respective areas will possibly show that the temperature at which development takes place varies a good deal less than the temperature prevailing in the different areas seems to indicate. For forms which live in boreal deep water, where the temperature is comparatively low all the year round, the difference is in any case not particularly great, and if it should prove that the widespread shallow-water forms develop during the winter in boreal areas, the difference there again is relatively small. Now we find that two of our typical littoral animals, the sea-slug *Cucumaria frondosa* and the starfish *Echinaster (Cribrella) sanguinolentus*, both of which inhabit arctic tracts, deposit their eggs in boreal waters early in March when the upper water-layers have a low