the organizing force) increase as we pass from the polar seas towards the equator the number of species thus augmenting greatly as we go southward. 2. The differences of form and organization are not only more numerous and more characteristic in the warm than in the cold regions of the globe; but they are also more important. 3. Not only are those *Crustacea* which are most elevated in the scale deficient in the polar regions, but their relative number decreases rapidly as we pass from the equator towards the pole. 4. The average size of the *Crustacea* of tropical regions is considerably greater than that of the tribes inhabiting frigid or temperate climes. 5. It is where the temperature is most elevated that the peculiarities of structure which characterize the several groups are most strongly manifested. And 6. There is a remarkable coincidence between the temperature of different regions and the prevalence of certain forms of *Crustacea*.*

The rate of performance of their functions in cold-blooded animals depends much upon the temperature in which they live. Now as the respiratory process is an exponent of the rate of life of any animal, that is of the rate of chemical change taking place in the organism, it follows from the above that should this be stopped, the length of life of the animal will be in the inverse ratio of the temperature to which it is exposed; and so we find it, for when frogs were confined in a limited quantity of water and not allowed to come to the surface to breathe

They died in	12	to	32	minutes	when	the water was	90°
" "	35		90	"	"	"	72
" "	350		375	"	"	"	50
" "	367		498	"	"	"	30

At the lowest temperature mentioned the prolongation of life was not due to torpidity, for all the functions of the animal were performed, but slowly.‡

In the production of larvæ from the eggs of insects, we see very much the same relation between heat and the vital force as in the case of plants; for the rate of development is in the direct ratio of the heat supplied, and the final transformation may be accelerated or retarded at pleasure, within certain limits, by regulating the amount of heat which they receive; but in every case—in eggs of the same insect—the same amount of heat is required, and must be supplied to effect the same transformation.||

The regularity observed in the period of gestation in warm-blooded animals, is no doubt due in great part to the regularity of temperature that they are capable of sustaining under nearly all circumstances, and which is necessary to the continuance of their vitality, and I would be inclined to think (though I cannot anywhere find it so stated) that the temperature of warm-blooded animals decreases as age comes on, from the single fact (if it be a fact) that the period of gestation is prolonged in accordance with the advance of age.

Besides the influence exercised by light in the decomposition of carbonic acid and ammonia in contact with the green leaves of plants, there is no doubt that

* Milne Edwards "Histoire des Crustaces tome iii pp. 555 et. seq. quoted by Carpenter in his article in Phil. Tran. 1850.

‡ Dr. F. W. Edwards "On the influence of physical agents on life."

|| Carpenter, Phil. Tran. 1850.