at length, on principles which are stated, and a final mean of the whole is arrived at, giving for the solar parallax $8''.877$. This is then compared with the result of the so-called Great Pyramid Sun Distance, which, combined with the best modern determination of the size and shape of the earth, gives a parallax of $8''.876$.

The direct results of modern science for the solar parallax vary anywhere between $8''.80$ and $8''.96$; and to assist in apprehending the present state of a very contested question as to one of the most important of all physical facts, Mr Petrie added to his paper two very instructive diagrams, in one of which the chief data were arranged chronologically, and in the other quantitatively.

2. On Chemical Structure. By Dr A. Crum Brown.

In this paper the author drew attention to the nature of the process of *Chemical Exchange* (including substitution, double decomposition, and some cases of direct addition and subtraction), as a process by which the *number* of relations in which any given atom stands is unaffected. He pointed out the connection between this process and the notion of chemical structure, and discussed the nature of those chemical processes in which the number of relations of an atom is increased or diminished. He concluded by some remarks on the ambiguous structure of such bodies as aldehyde, the sulphites, and hydrocyanic acid, which from some points of view may be represented as—

others as