

the curves in terms of the Daniell's cells is shown for every value of the charge of the reservoir.

This apparatus has scarcely been in use for a sufficiently extended period to allow of any reliable deductions being made as to the existence of laws in the variations of the force of atmospheric electricity, or of any relations that may exist between this and other meteorological phenomena. Some facts, however, can be already gathered from the curves obtained. These are, first, the periods of maxima and minima, which are most distinctly shown. The former occurs at from 6^h 30^m to 8^h 30^m A.M., the latter at from 1 P.M. to 3 P.M. A second maximum at from 9 to 10 P.M., and a second minimum at from midnight to 2 A.M. are also indicated.

The greatest disturbances take place during our northerly winds, especially in dry hot weather, when a very great negative tension often occurs, so strong as to be beyond the measuring-power of the instrument, in which case sparks may be generally obtained from the air-electrode. The usual turning of the wind from N. to S.W. is always accompanied for a short period by an almost equally high positive tension, but during strong and hot northerly winds the high negative tension lasts as long as the wind blows strong and dry.

XII. "Further particulars of the Swedish Polar Expedition." In a Letter addressed to the President, by Prof. A. E. NORDENSKIÖLD. Communicated by the President. Received June 12, 1868.

Stockholm, June 7th, 1868.

SIR,—I had last night the honour of receiving your letter, and hasten to express my gratitude for the offer of some magnetical instruments. As an able *élève* of Prof. Edlund, Dr. Lemström, will join the expedition, exclusively for studying the meteorology and terrestrial magnetism of these remote regions, I hope that these instruments will be often and advantageously employed. But *the expedition will start from Gottenburg the 1st July, or from Tromso the 9th July.* The boxes can be addressed to *Count Ehrenward, Gottenburg, or Consul Aagaard, Tromso.* Excepting myself and two officers of the Navy (Capt. Baron v. Otter and Lieutenant Palander), the expedition will consist of—

Doctor Malmgren,	}	Zoologists.
„ Smitt,		
„ Nyström,		
Mr. Holmgren,	}	Botanists.
Doctor Fries,		
„ Bergren,		
Doctor Lemström, "Physiker."		

A Geologist, a Conservator, and about 20 Mariners.

Almost all the zoologists and botanists will, however, return in September, with a ship hired for the purpose, and the remaining party will try to go further northward, west, or eastward, from the north-west part of Spitzbergen, where the expedition can obtain a sufficient depôt of English coal. We will also try to employ the brown coal of King's Bay ; but I fear this supply is not to be relied upon.

XIII. "An attempt to apply Chemical Principles in explanation of the Action of Poisons." By W. H. BROADBENT, M.D.
Communicated by Dr. F. SIBSON, F.R.S. Received June 18, 1868.

(Abstract.)

The starting-point in the inquiry has been the two following postulates :—

1. That there must be some relation between the substance administered and the animal organism, on which the effects depend.
2. That, so far as the substance is concerned, the basis of the relation can only be its chemical properties, using the term in its widest sense.

From these postulates follow certain corollaries :—

1. That the physiological and therapeutic action of the same substance must be similar in kind.
2. That the action of food, remedies, and poisons must be capable of explanation on the same principles.
3. That substances chemically allied should have similar physiological and therapeutic actions, or any diversity found to exist should be capable of explanation on chemical grounds.

The second of these deductions is taken as a guide in the present inquiry. Something is known as to the uses of the various classes of foods in the economy, and of the mode in which they subserve these uses ; this knowledge may be applied in the endeavour to ascertain the mode of action of poisons.

The operations taking place in the animal organism may be divided into two great classes :—(α) for maintenance of structure, (β) for evolution of force. While mutually interdependent, they are distinct, and in character essentially antagonistic, structural and chemical elaboration on the one hand, oxidation or disintegration on the other.

The two great classes of food, organic and mineral, are in close relation with these. The organic foods build up the tissues, but ultimately undergo oxidation and yield force. The inorganic foods take a subordinate part in the composition of the textures ; they do not yield force by oxidation, but they influence the nutritive processes. So also the organic remedies and poisons affect the evolution of force, mineral substances the organic processes.

(The action of mineral matters has been noticed elsewhere.)