pressing industrial duties, but the numerous results and photographs are being summarised for publication at a later date. Meanwhile, the basis of the method is made available for workers who wish to prepare large, clear cubes of sodium chloride for optical or other purposes.

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Relation between the Potential Gradient and the Number of Large Ions in the Atmosphere.

IN making some tests recently with an apparatus designed for the observation of large ions in the atmosphere, I have found evidence of a close connexion between the concentration of large ions and the magnitude of the atmospheric potential gradient. When conditions are not quite steady the two quantities frequently vary simultaneously in the

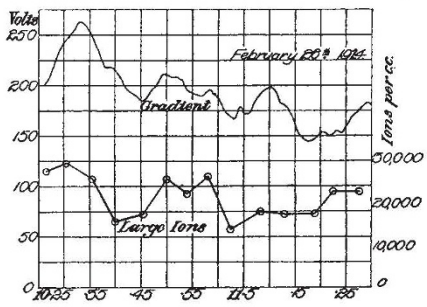

FIG. 1.

same fashion, large values of one being accompanied by large values of the other. The curves in Figs. 1 and 2, each representing about one hour's observations, show examples of this correspondence. The connexion is not always so well marked, as large and irregular fluctuations in the potential gradient are often unaccompanied by any notable change in the concentration of large ions. There is nearly always, however, a general resemblance between the curves obtained, and in a number of cases, peaks even more sharply defined than those of Fig. 2 have been found to coincide. The figures for the concentration of large ions refer to ions of one sign only. No great difference has so far been found between the numbers of positive and negative ions, except on one occasion during heavy rain, when the potential gradient was negative and negative ions were present in considerable excess. The values given for the potential gradient are not absolute values with reference to a plane surface.

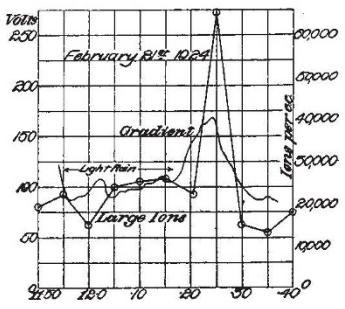

FIG. 2.

The connexion between the large ions and the earth's field is further made clear by bringing together the results of daily observations (Fig. 3). In computing the mean daily values, observations made during rain or when violent fluctuations were occurring were disregarded. The correspondence is fairly close, and might perhaps have been closer had the observations been taken at the same time each day.

The effect of the large ions on the potential gradient is probably not a direct one. A large number of these ions implies a small number of the more mobile small ions, and therefore an increased resistance in the lower layers of the atmosphere and a steepening in the potential gradient. The question arises as to whether all observations of potential gradient made

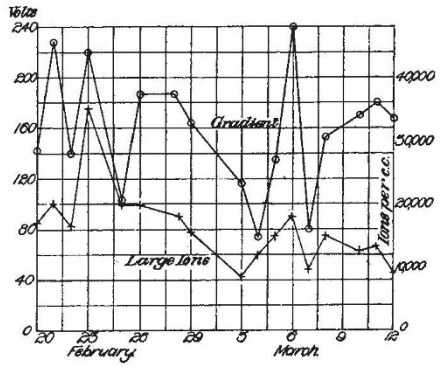

FIG. 3.

in the neighbourhood of cities are not affected in this way—certainly the highest absolute values are reported from regions where high values of atmospheric nucleation are to be expected.

These observations are being continued and will be reported later at greater length.

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University College, Dublin,
March 13.

The Golgi Apparatus in the Avian Oocyte.

IT is remarkable that, although so much work has been done on the oogenesis of the bird, the Golgi apparatus has never been described in the avian oocyte, so far as I am aware. In his monumental work published in the *Archives de Biologie* in 1914, Dr. Modeste Van Durme failed to find any Golgi apparatus, although he used some of the Golgi apparatus osmic techniques. Working with Dr. Da Fano's cobalt-silver-nitrate technique on the ovary of the fowl, I have succeeded in demonstrating the apparatus. As I believe this to be the first demonstration of the apparatus in the oocyte of a bird, and on account of its remarkable and, in many ways, unique characters, I claim the hospitality of your columns for a short preliminary account.

The Golgi apparatus in the ovarian oocytes of the fowl comprises two distinct sets of structures which I will call, for convenience, type 1 and type 2. In the oocytes surrounded by a follicle one cell thick the apparatus of type 1 appears as an excentric sphere with ring-shaped elements, heavily impregnated by the silver, studded over its surface. This apparatus is situated between the nucleus and the yolk-body of Balbiani, at what will be the vegetative pole of the cell (Fig. 1, GA_1).

When in some cases the yolk-body of Balbiani and the nucleus touch, this apparatus is found in the angle between the two and touching both. It is peculiar in that it is separate from the yolk-body of Balbiani, which is generally considered to represent the centrosphere. It may measure as much as 1/32 mm. in diameter and is probably the largest Golgi apparatus ever described in an animal cell. I am not at present able to give a final opinion as to the relations of this apparatus and the yolk-body of Balbiani to the centrosome, but by removing the silver and staining in iron hæmatoxylin after having drawn marked cells, I found that a darkly staining diploid body could