have lost sight and hearing from the same disease. The returns have not yet been sufficiently analyzed to enable us even to separate the congenital from the adventitious cases. We cannot therefore tell at the present time how far the evidences of correlation may be weakened by a closer inspection of details.

The large number of deaf-mutes who have been classified as idiots, also suggests caution in accepting the returns. I recently met a young lady — one of the brightest and best pupils of the Illinois institution for the deaf and dumb — who commenced her school-life in an idiot-asylum. She was there discovered to be simply deaf, and was transferred to the Institution for the deaf and dumb at Jacksonville, where she not only received a good education, but was successfully taught to speak. Not only are children who are simply deaf, sometimes sent to idiot-schools; but idiotic children who hear perfectly are often sent to institutions for the deaf and dumb, when it becomes the painful duty of the principal to undeceive the parents as to the real condition of their child. The difficulty in distinguishing these two classes of defective persons arises from the absence of articulate speech. Children who are deaf from infancy, and idiots, do not naturally speak, but from very different causes. In the one case, the cause is lack of hearing; in the other, lack of intelligence. The judgment of unskilled persons regarding the intelligence of deaf-mutes should evidently be received with caution. It is only to be hoped that the number of idiotic deaf-mutes returned in the census has been over-estimated. Before accepting the results as thoroughly reliable, it would be well to know whether or not the persons who made the returns were competent to judge in the matter.

ALEXANDER GRAHAM BELL.

EARTHQUAKE OF JAN. 2, 1885.

THE daily papers of Jan. 3 contained reports of a slight earthquake in Maryland and Virginia the previous evening.

On Jan. 4 circulars of inquiry were sent to more than twenty places in the vicinity of the reported shock. The questions asked had reference to the time of the shock, its duration, number of shocks, character of accompanying noise, and intensity according to a given scale. It will be necessary here to quote only the first three of the six numbers of this proposed scale of intensity, which are as follows: —

No. 1. *Very light.* — Noticed by a few persons, but not generally felt.

No. 2. *Light.* — Felt by the majority of persons, rattling windows and crockery.

No. 3. *Moderate.* — Sufficient to set suspended objects (chandeliers, etc.) swinging, or to overthrow light objects.

In response to this circular, seventeen written reports, and a copy of the Leesburg *Mirror*, were received; and from these replies, together with reports in the New-York *Tribune* and in *Science*, a tabulated summary was prepared, and represented graphically upon the accompanying map, on which are marked all the places from which any report, either manuscript or press, was at hand.

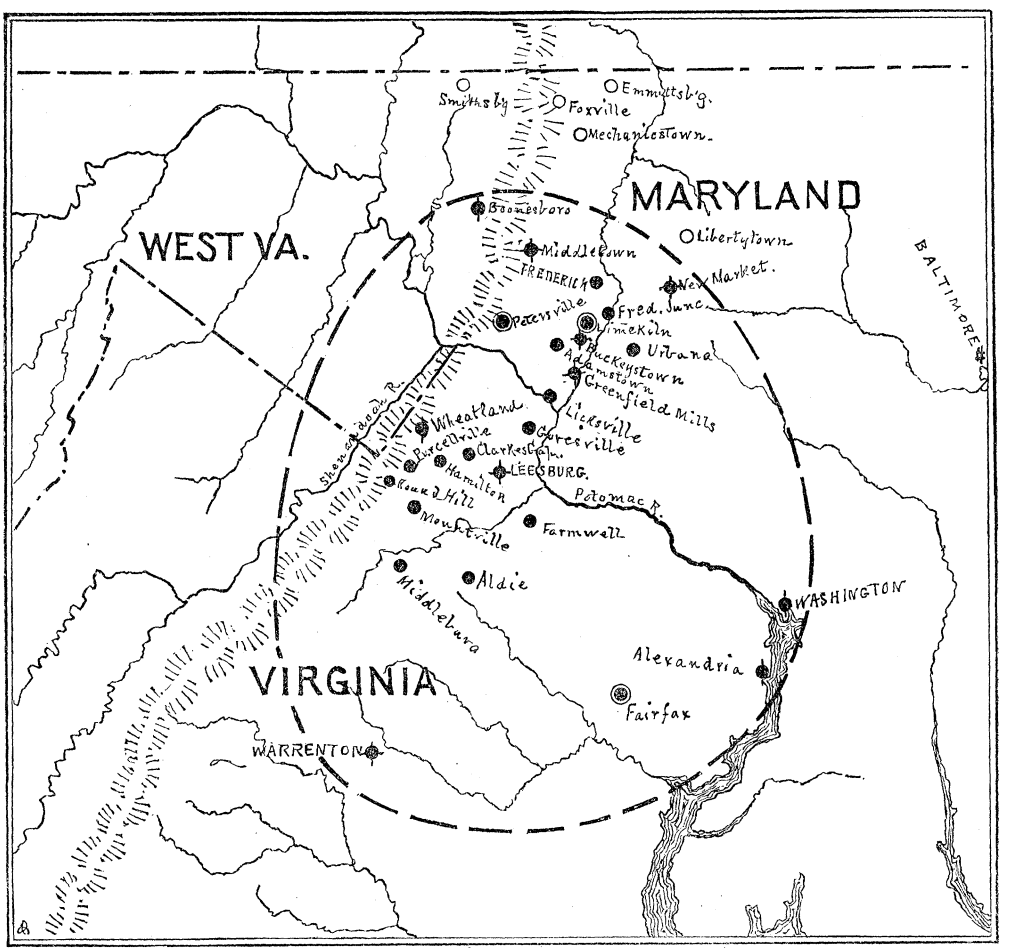
As is there shown, the northern boundary of the region affected is well determined by manuscript reports from five places lying beyond its limits. The inquiries, which might have determined its limits as clearly in other directions, failed to elicit any response. It appears to have extended very little, if at all, west of the mountains. The only direct report obtained from that region was from Boonesborough, Md., where it was felt *near*, but not *in*, the town. The Leesburg *Mirror* stated generally that it was felt in Jefferson county, W. Va., but no reply was received to circulars sent there.

The closest approximation to the true time is probably 21 h. 12.1 m. eastern time, as given by W. C. Winlock at Washington, D.C., with which agree also the reports of W. J. Grove at Lime Kiln, Md., and W. H. Routzahn at Middletown, Md. These are the only reports which vary from 21 h. 10 m. or 21 h. 15 m., except Fairfax, Va., which is 21 h. 5 m., and W. H. Dall at Washington, who gave 21 h. 16 m. At Adamstown, Md., two shocks were reported; and at Buckeystown, Md., a second very light shock at 21 h. 45 m.

The estimates of duration were, as usual, very discordant, varying all the way from three seconds to two minutes. As the tendency of ordinary observers is always to exaggerate this element, the unexpected and exciting nature of the phenomena making the time seem longer than it really is, probably ten or fifteen seconds would be a liberal estimate of the duration.

The noise accompanying the shock was compared to that made by a loaded wagon passing rapidly over frozen ground or over a bridge, to distant thunder, and to the roaring of a chimney on fire. In some cases persons went out of their houses to see if their chimneys were not burning.

The shock seems to have been most severe in the southern part of Frederick county, Md., where, at Petersville and Lime Kiln, it reached No. 3 of the proposed scale. At most places it did not exceed No. 2, and it is therefore called above a 'light' shock. There are some



○ Not felt. ● Very light. ⊖ Light. ⊙ Moderate. ● Not reported.

EARTHQUAKE, JAN. 2, 1885, 9 H. 12 M., P.M.

indications, also, of a focus of increased intensity in the southern part of the area affected, as shown by the reports from Warrenton and Fairfax, Va., but no confirmation of these was obtained.

The limits of the shock and its intensity at various places, so far as reported, are indicated by appropriate symbols upon the map, to which the reader is referred.

C. G. Rockwood, Jun.

AMERICAN MILK.

Some interesting facts have come to light, during the investigations, by the U. S. agricultural bureau of chemistry, of the composition of milk. The object of the investigation is to determine by large numbers of analyses made under uniform conditions, and on samples from various sources, the average constituents of American milk. The work which has been done up to this time has been mostly of a local nature, but sufficiently extensive to give value to the results obtained.

The specific gravity of milk is 1.030. When the cream has been removed, this number is larger. Twelve samples of milk from Mr.