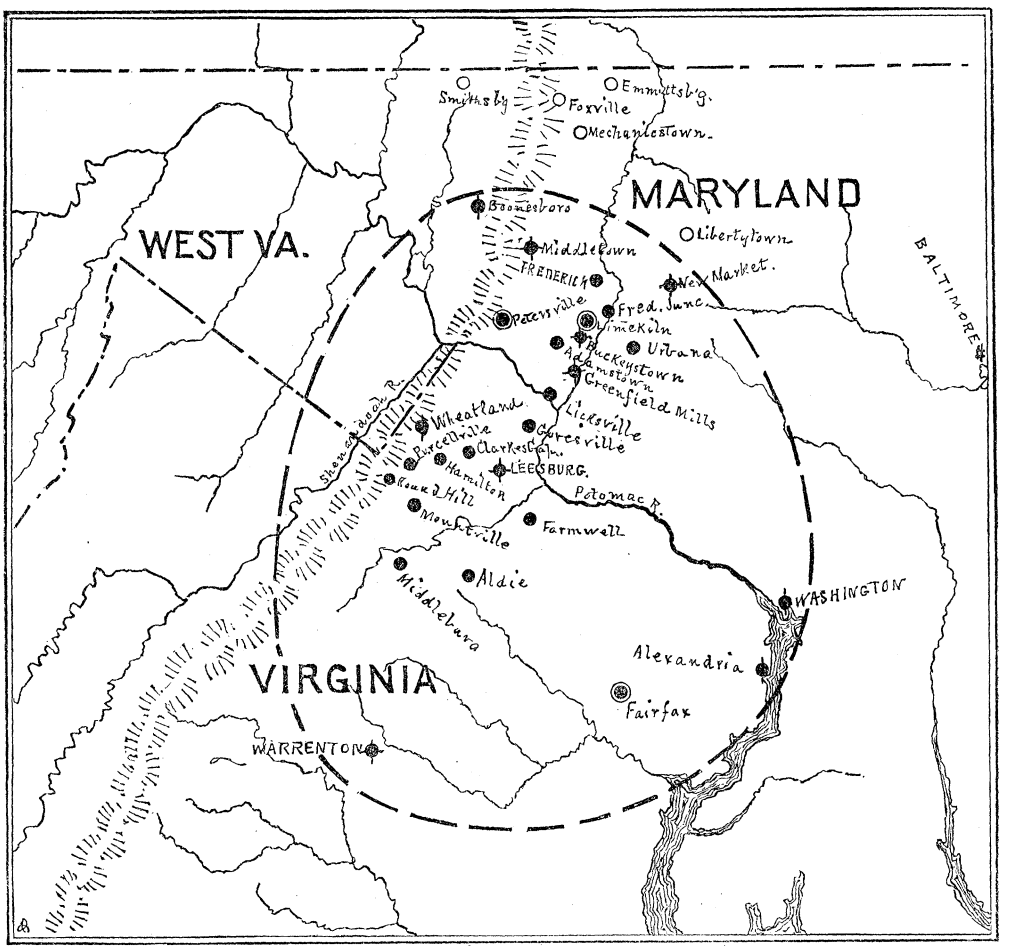
The shock seems to have been most severe in the southern part of Frederick county, Md., where, at Petersville and Lime Kiln, it reached No. 3 of the proposed scale. At most places it did not exceed No. 2, and it is therefore called above a 'light' shock. There are some



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

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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.

G. L. Higby gave an average specific gravity of 1.0295. Two samples of a Jersey cow's milk sent by the commissioner of agriculture marked 1.033. The milk from Mr. W. Blair, of a cow fed principally on ensilage, twenty-two samples, gave specific gravity 1.0318; same cow fed 'chop food,' fifteen analyses, 1.310. It is a very common practice to remove the cream, and then add water until the milk is reduced to its original density. For this reason the use of the lactometer for determining the purity of milk may lead to serious error. It is also true that perfectly genuine milk may vary greatly in density. The first of the milking is always poorer in cream, and therefore denser, than the last. Unless, therefore, the conditions under which the sample of milk is obtained are known, the number expressing its density is not conclusive in respect to its genuineness.

The volume of cream which a given milk will afford depends on many conditions. Transportation, shape of vessel, temperature, and time allowed for cream to rise, are the chief causes which affect the cream volume. A remarkable decrease in the volume of cream has also been noticed in milk samples purchased in open market. Thirteen samples bought in open market showed a percentage of cream of seven. Thirty-four samples bought of the dairyman, and known to be genuine, gave fifteen per cent of cream by volume. This curious phenomenon will certainly be of interest to milk-buyers.

The fat in a milk is not always in proportion to the volumetric percentage of cream: therefore the determination of the fat (ether extract) gives a better index of the butter-making value of the milk than is afforded by the volume of the cream alone. In a hundred and seven analyses the average percentage of fat was nearly five.

The sugar is the most constant constituent of milk. Over two hundred analyses show an average percentage of sugar of milk of four and six-tenths. Its determination optically is quick and accurate. It is the safest single criterion by which to judge of the purity of the sample.

The caseine of milk is composed of several albuminoids. No attempt at separation of these bodies has been made. The average percentage of albumens in American milks is markedly less than in those of other countries. In the analyses made, the average per cent is nearly three and a half. These analyses show that the milks of the United States are better adapted for butter than for cheese making. They are characterized in general by a large percentage of fat and sugar, and a lower content of albumen, than the milks of Europe. It is the intention of the bureau to extend these analyses so as to determine the localities of the country where the best milks are produced, to note the influence of change of season on the composition of the milk, and to carefully study the characteristics of the milk of different breeds of cows, and the influence of various foods thereon.

Much of the value of analytical work on milk which is done in this country is lost on account of the many different methods of analysis employed. These different methods render it impossible to compare the work of various analysts. The bureau hopes also, by a patient trial of all the most approved methods, to be able to unite the analysts of the country on that procedure which a large experience may pronounce the best. H. W. WILEY.

NOTICE OF SOME RECENTLY DISCOVERED EFFIGY MOUNDS.

So few earthworks resembling animals in their shape are known beyond the limits of Wisconsin, that I send you an account of several which I have discovered during the past two seasons, the majority of which are situated south of St. Paul, twenty-five of them being in this state.

In the diagrams accompanying this article, I have shown the outlines of a few of the most interesting of these Minnesota effigy mounds, and here give a short description of each, with its surroundings. They are all reduced to the same scale, 1 : 500.

No. 1 is situated near the village of La Crescent, and probably represents a frog. Its greatest length is ninety-eight feet. The body is two feet high, and the head eighteen inches. Near it is a bird-effigy; and within a quarter of a mile there are five other bird-effigies, with sixty-nine round mounds and embankments. The frog is on a terrace about fifty feet above the Mississippi River; and part of the mounds are on the lower terrace, which is about thirty feet above the river.

No. 2 is on the town site of Hokah. It is situated on a terrace some seventy feet above Root River. From the extremity of the snout to the tip of the tail, its length in a right line is just sixty-two feet and a half, and the body is a foot and a half in height. There are two bird-effigies on a terrace some ten feet below this one. Formerly there existed sev-