sponse has been very gratifying, but as the circular was sent with a one cent stamp, it did not reach immediately some of those absent from home during the summer holidays. I shall be glad if those who have received this blank will fill it in and return it to me. It will be necessary to send a second request by letter postage to those who have not replied; but time and money will be saved if those who see this note will be so kind as to fill in and return the blank in case they have not already done so.

The list of those to whom the blank was sent was compiled with care, and includes the members of the scientific societies of the United States requiring research as a qualification (some fifty), the scientific staffs of the leading institutions of learning (some seventy), the scientific men included in 'Who's Who in America' and others whose names were accessible. There are, however, many connected with smaller institutions and in private life, not members of scientific societies, who have published research work of value, and I shall be glad to have assistance in securing their names and addresses. I shall be under obligations to any readers of this journal who have carried on research in the sciences, but who have not received the blank, if they will send me their names; and I shall be glad to receive the names and addresses of any who have carried on research, but whose names would not be discovered from the lists of societies, larger institutions of learning and existing biographical dictionaries.

J. MCKEEN CATTELL.

GARRISON-ON-HUDSON, N. Y.

SHORTER ARTICLES.

THE PARASITISM OF CEPHALOTHECIUM ROSEUM.

IN discussions of the numerous fungi that are known to cause the rotting of apples and other fruits *Cephalothecium roseum*, Corda, has had but brief mention. It is generally regarded as a saprophyte, and Clinton* reports it as such on badly rotted apples. However, Aderhold* observed a case in which it caused a rotting of pears by growing through *Fusicladium pirinum* spots. But it has never been classed as a rot fungus of any economic importance.

In New York State during the past season it has proved to be a true parasite and the cause of an apple rot of great economic importance. In some sections of the State thousands of barrels of apples have been ruined by it. Apple scab, *Fusicladium dendriticum*, has been unusually common this year. In September and October it was noticed that on many of the scab spots there appeared a white or pinkish growth which transformed them into brown, sunken, bitter, rotten spots. Upon investigation it was found that this white growth was *Cephalothecium roseum*, Cda., and inoculations made upon many different varieties of apples and pears under antiseptic conditions, with pure cultures, have proved that it is parasitic, and the cause of the rot. In every inoculation the characteristic rot developed while the same number of check fruits remained sound.

The common occurrence of this fungus upon the *Fusicladium* spots while it is wholly absent from other portions of the fruit is due to the fact that *Fusicladium* ruptures the epidermis and thus furnishes a means of entrance for the *Cephalothecium*, which could not otherwise attack the fruit, since it appears to be incapable of penetrating the unbroken epidermis.

It is often found on apples while still on the trees; but after they have been harvested and left in piles on the ground or barreled and allowed to remain where the sweating process can take place, it has become so abundant on certain varieties as to ruin the fruit for storage.

Further investigations are in progress; and when completed they will be published in a

* Clinton, G. P., 'Apple Rots in Illinois,' Ill. Agr. Exp. Station Bul. 69: 193. F. 1902.

* Aderhold, Rud., 'Arbeiten der botanischen Abteilung der Versuchsstation des Kgl. pomologischen Instituts zu Proskau,' *Centralbl. f. Bakt. Parasitenk. u. Infektionskr.*, II. Abt., 5: 522. 1899.

bulletin of the New York Agricultural Experiment Station. H. J. EUSTACE.

GENEVA, N. Y.,
October 24, 1902.

CURRENT NOTES ON PHYSIOGRAPHY.

THE MISSISSIPPI IN SOUTHEASTERN MISSOURI.

THERE is a narrow belt of lowland in southeastern Missouri that is separated from the broad lowland flood plain of the Mississippi by a low upland known as Crowley ridge. Marbut gives an interesting explanation of these features ('The Evolution of the Northern Part of the Lowlands of Southeastern Missouri,' Univ. of Missouri Studies, I., 1902, No. 3, viii + 63 p., 5 pl., 2 maps). The two lowlands have been eroded by the Mississippi and the Ohio rivers, whose confluence originally lay south of Crowley ridge. A series of changes, well worked out by the author, resulted in two successive captures of the Mississippi, whose flood plain was at a higher level, by the Ohio, whose flood plain was at a lower level. The first capture was at the head of Crowley ridge; and here the river ran long enough to open a flood plain thirty miles wide. The second capture was fifteen miles farther northeast, at the head of a smaller upland called Benton ridge, where the new twenty-mile course of the great river has been so lately assumed that it is still a narrow gorge without bordering flood plain. Crowley and Benton ridges are, therefore, in a certain sense examples of that peculiar class of hills which results from the isolation of the terminal part of a ridge between two rivers when a new point of confluence is developed, upstream from the former point; the notable feature of this case being the unusual length of the first (Crowley) isolated portion of the ridge. This origin of the ridge had been suggested in general terms by earlier writers; but to Marbut belongs the credit of demonstrating the changes involved and of explaining closely the processes by which they were brought about.

LAKES IN THE GLARNER ALPS.

THE origin of the small lakes in the higher valleys of the Glarner Alps, southeast of Zurich, is discussed in a doctorate thesis of the University of Basel by S. Blumer ('Zur Entstehung der Glarnerischen Alpenseen,' *Eclog. geol. helvet.*, VII., 1902, 203–244, 4 pl.). He concludes that the lake basins are all closely associated with the former glaciation of their valleys. Most of the basins are described as relatively insignificant depressions due to glacial erosion in an old valley floor; but some of them are enclosed, in part at least, by torrential fans, and others are associated with underground discharge in limestones.

This essay shares with many others a plan of treatment that seems, in view of recent studies of glacial erosion, to give a too limited consideration to the problem in hand. It is tacitly implied that the rock barriers next below the basins have not suffered any significant amount of erosion; and hence that practically the whole measure of glacial erosion is seen in the depth of the basins above the barriers. Many recent studies indicate, on the other hand, that both basins and barriers in glaciated valley floors have suffered severe erosion, and that the excess of erosion in the basin over that on the barrier is a relatively small fraction of the total erosion by which the valley trough—the glacial channel—as a whole was deepened. The origin of lake basins in glaciated districts therefore calls for a general study of the entire valley in whose floor the lake occupies only a 'relatively insignificant depression'; just as the origin of a pool in a dry river bed involves the explanation of the whole river channel, and not merely of the pool alone. It may also be noted that the torrential fans by which so many of the Swiss valleys are obstructed, in some cases to the point of barring lakes, are best explained as indirect consequences of glacial erosion; the stream in the over-deepened main valley being unable to sweep away the abundant detritus washed in by the over-steepened side streams that leap down from their hanging valleys. In a word, the study of Alpine lakes demands a more general treatment than it is given in Blumer's essay.

THE LAKES OF WALES.

THE deficiency just pointed out is largely remedied in 'A Bathymetrical and Geological