also showed infection in a more or less serious degree. This rust is not rœstelia-like, as in the case of the more common apple rust and other rusts whose telial stage is a Gymnosporangium. The incense cedar which bears the telial stage is very common in southern Oregon, being found on the floor of the Rogue River Valley at an altitude of 1,400 feet. The proximity of incense cedar trees to apple and pear orchards is therefore of considerable economic importance.

The hosts upon which the æcia of this rust have been found are:

Malus malus (L.) Britton (apple).

Malus floribunda Sieb. (several varieties) (flowering crab).

Pyrus communis L. (pear).

Pyrus chinensis (Oriental pear).

Pyrus sitchensis (Roem.) Piper (mountain ash).

Malus diversifolia (Bong.) Roem. (native crab apple).

Cydonia vulgaris (L.) Pers. (quince).

Cydonia japonica (Thumb.) Pers. (Japan quince).

Amelanchier florida Lindl. (serviceberry).

Cratægus douglasii Lindl. (thornapple or haw).

Culture records and final proof will be given in a detailed paper which will be published in the near future. This preliminary paper is given simply as a statement as to what has been found.

P. J. O'GARA

PATHOLOGICAL LABORATORY,
MEDFORD, OREGON,
September 1, 1913

A POSSIBLE MUTANT IN THE BELLWORT (OAKESIA SESSILIFOLIA) WHICH PREVENTS SEED FORMATION

THE sessile-leaved bellwort (*Oakesia sessilifolia*) is used in many elementary classes in botany as a convenient type to illustrate the Lily family. The normal pistil with a single detached stamen is shown in Fig. 1, magnified three diameters. There are three stigmas terminating styles which are free at their extremities. In class material collected late in the spring of 1912, flowers were discovered with pistils of the form shown in Fig. 2. The pistil is shorter and thicker than in normal flowers but the essential abnormality consists in the transformation of the three stigmas into functional stamens, each with a pair of pollen sacs. Aside from the hermaphroditism of the pistil, the abnormal flowers do not differ in appearance from typical blossoms and bear their full quota of six normal stamens. The stigmatic anthers are well formed and filled with perfect pollen indistinguishable from that produced in typical anthers. In three per cent. grape sugar as well as in cane sugar, pollen from the two types of anthers show an equally high per cent. of germinations. Eleven attempts were made last spring to pollinate normal pistils with pollen from abnormal flowers, pollen both

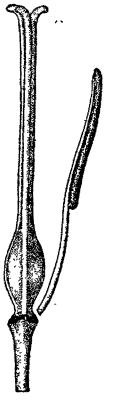

FIG. 1.

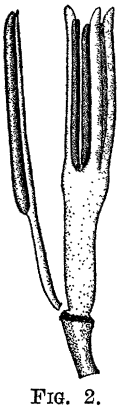

FIG. 2.

from stigmatic and from typical anthers being used, but in no case did seed set. Very few capsules were found with seed this last season, however, on untreated plants. In the spring of 1913 search was made for flowers with stigmatic anthers. Of 305 flowers examined from a woodlot which comprised about five acres, there were only 13 with stigmatic anthers. Twelve were found in a patch about 10 ft. square and a single specimen 100 ft. distant. A single flower with stigmatic anthers, however, had been found the previous year about 200 yards from the patch just mentioned. Some few of the flowers classed as normal had rudimentary pistils though normal stamens. One hundred and thirty-two flowers from outside this woodlot were found to be normal. The total number is not sufficient to warrant one in making a suggestion as to the probability of the abnormal form having originated in this single locality.

The transformation of stigmas into anthers seems to completely block the possibility of fertilization, for the ovules which are laid down in deformed pistils have never been found to develop. The abnormality described, therefore, has a double interest. It not only shows an alteration in the products of an organ with a highly stereotyped sexual development, but it also offers an instance apparently of a mutation directly unfavorable to the reproduction of the species. In consequence the subject has seemed worthy of further investigation and the present note is to call attention of botanizers this spring to the possible occurrence of the abnormality in other localities. We should be glad to correspond with any one finding abnormal flowers of the bellworts.

A. F. Blakeslee,
A. F. Schulze

Connecticut Agricultural College,
Storrs, Conn.

Societies and Academies

The Anthropological Society of Washington

At the 470th regular meeting of the society held December 16, 1913, James Mooney, of the Bureau of American Ethnology, delivered an address on "The Gaelic Factor in the World's Population." The speaker dealt chiefly with the Irish Gaels and drew a distinction between the Irish of native Gaelic stock and the unassimilated alien element massed in several of the northeastern counties as the result of the "Plantations" under James I. and Cromwell. This alien element was of English and Lowland Scotch stock, with a slight Highland Gaelic infusion, Protestant in religion and mostly Unionists in politics, while those of the old native stock were as solidly Catholic and Nationalist. Speaking broadly, in Ireland the Catholics represent the original Gaelic stock; the Episcopalians, those of English stock, and the Presbyterians and Methodists, those of Scotch origin, constituting respectively about 74, 13 and 11 per cent. of the total population. The present Gaelic race of Ireland is a blend of the Gael proper, a Keltic people who arrived in the country probably from northern Spain about 1,000 B.C., and of all other races who preceded or followed them up to the end of the thirteenth century, including the neolithic man, the unknown megalith builders, the dark-haired Firbolg, the Picts, Danes, Normans and Welsh. The Irish immigration to the American colonies previous to the Revolution was mainly of the alien Scotch and English element, known sometimes as Scotch-Irish. The Gaelic Irish immigrants did not begin to arrive in any great number until after the war of 1812, excepting in Maryland.

The wars growing out of the Reformation and the Stuart contests reduced the Irish race from an estimated two and a half million in 1560 to about 960,000 at the end of the Cromwellian war in 1652. In 1845 it reached its maximum estimate of 8,500,000. Then came the great famine of 1846–47. Within three years nearly 1,500,000 perished of hunger or famine fever. This started the great flood of emigration by which Ireland has lost virtually one half its population within sixty years. In 1911 it stood at 4,390,219, the lowest point reached in over a century. Owing to governmental and economic conditions this decrease has been chiefly at the expense of the old native Gaelic stock rather than the Planter stock, the Gaelic percentage, as indicated by the religious statistics, having fallen from 83 to 74. In the sixty years ending March 31, 1911, according to the official British figures, 4,191,552 emigrants left Ireland, or nearly as many persons as are now living in the country. About three million of these came to the United States, the total Irish im-