

is well illustrated by a chemical analysis given above (II.), made by H. N. Stokes of a hypersthene-augite andesite of Crater lake.

J. S. DILLER,
GEORGE STEIGER.

U. S. GEOLOGICAL SURVEY.

THE GRAY SQUIRREL AS A TWIG-PRUNER.

LAST year my attention was called to some elm street trees in New Haven, which had been injured by having the twigs eaten off early in June. The twigs were cut off through the hard wood formed the previous season, just below the new growth. Under certain trees the ground was fairly covered with the detached twigs. No borers were found in the severed portions as is the case when infested by the oak pruner, *Elaphidion villosum* Fabr., which attacks several kinds of shade trees. Still, it was supposed that some insect caused the damage, as climbing cut-worms sometimes eat off the new growth—but usually through the soft tissue.

The present season, similar injury has been reported from Farmington and New Haven.

On May 23, while cycling through the streets of New Haven, I noticed a small elm tree under which the ground was covered with freshly severed twigs. The same tree was attacked last year. Four gray squirrels were seen in the top busily engaged in devouring the nearly ripe seeds. As the seeds of the American elm are near the extremity of last season's growth where the twigs are very slender, the squirrels were obliged to perform many noteworthy acrobatic feats in order to obtain the seeds. Some were hanging by the hind feet from slender branches to reach twigs beneath them, and all were munching away at the seeds as if half starved. In some cases they were not able to reach the clusters of seeds, and would bite off the twigs, which dropped to the ground where they could find their food later. Several twigs were dropped in this way in a period of about two minutes, while the writer was watching them. In some cases the squirrels cut off twigs from which they had already eaten the seeds. Trees bearing no seeds are not pruned in this manner, and none of the trees will probably be injured very seriously.

This habit of squirrels may have been recorded by other observers, but I do not remember seeing it in print.

The best remedy seems to be to provide the squirrels with plenty of other food at this season of the year when their natural food supply has been nearly exhausted.

W. E. BRITTON.

CONN. AGR. EXPERIMENT STATION.

W. E. HAMILTON.

IN Chatham, Ontario, there died a short time ago William Edwin Hamilton, the elder son of Sir W. R. Hamilton, the great Irish mathematician. He gave his father some help in reading the proof sheets of the 'Elements of Quaternions,' and his name appears as editor on the title page of the first edition. As the book had been printed off in sheets under the care of his father, his work as editor of the posthumous volume did not amount to much. He had graduated B.A. at Trinity College, Dublin, and had been trained to the profession of civil engineer. The editing finished, he left for the West Indies, located in various parts of the New World, and finally settled down in Chatham, then the center of immigration to the peninsula of Ontario. He was employed on the newspaper of the town, and through drinking habits fell into very wretched circumstances. When I first saw him, underclothes were conspicuous by their absence, and his sleeping place was said to be the loft of a livery stable. By taking the gold cure he was able to master his alcoholic enemy; but no cure could recall or even make up for the years he had wasted. Every Saturday he might be seen distributing a leaflet of a newspaper called the *Market Guide*, which contained advertisements, a list of prices of farm produce, a few witticisms, and occasionally some doggerel verses which he called poetry. In his later years he lived poor but respectable. He loved to talk about the members of that brilliant society in which his father moved, and he had not a few friends who esteemed him, if not for his own, at least for his father's sake. He was about sixty years of age, and his death was very sudden.

ALEXANDER MACFARLANE.