come. He has since lived in Hampshire, at his country house, 'Odiham Priory,' about forty miles from town, taking a house for his family in London for three or four months at the beginning of each year. In summer he constantly visits the Continent, making excursions to see the various zoological gardens and museums.

One of his closest friends was the late Prof. Huxley, long a member of the Council of the Zoological Society, where he was one of Mr. Sclater's most constant supporters. Prof. Huxley, it may be said, was the chief advocate of the project of employing an anatomist at the Society's gardens, and invented the title 'prosector' for the new office. A. H. Garrod who became prosector in 1871, and W. A. Forbes, who succeeded him in 1879—both talented and promising young naturalists—were dear friends of Sclater, and the unfortunate death of Forbes during the excursion to the Niger in 1883 was a most severe blow to him. Notable among his other friends was Charles Darwin, who frequently visited him in his office, bringing long lists of memoranda for conference.

Mr. Sclater married, in 1862, Jane Anne Eliza Hunter Blair, daughter of the late Sir David Hunter Blair, baronet, of 'Blairquhan,' in Ayrshire. He has five children, of whom four are sons. The eldest, William Lutley Sclater, has inherited his father's tastes; he was for four years an assistant in the Indian Museum in Calcutta, and after a short term of service as science master at Eton College was appointed director of the South African Museum at Cape Town, a position which he now occupies.

The second son, Capt. Bertram Lutley Sclater, is an officer in the Royal Engineers, and is now on duty in British East Africa, constructing a road to Uganda from the coast.

The third son, Lieut. Guy Lutley Sclater, an officer in the Royal Navy, is a specialist in torpedo work; while the youngest, Arthur Lutley Sclater, is a tea planter in Ceylon.

Mr. Sclater received the degree of doctor of philosophy, honoris causa, from the University of Bonn in 1860, and in 1861 was elected a fellow of the Royal Society, on the Council of which he has twice served.

At the age of sixty-seven he is still in full mental vigor, and adding each year a number of papers to his already remarkable list. May this useful career be continued for many years to come.

G. Brown Goode.

ON THE FLOATING OF METALS AND GLASS ON WATER AND OTHER LIQUIDS.

During the progress of a research on the surface tension of liquids, and on the tension of films, I observed that rings of aluminum, made of wires of various diameters, floated on water when these rings were *chemically clean.* A ring 62 millimeters in diameter, made of aluminum rod 3.6 millimeters ($\frac{1}{7}$ inch) in thickness and weighing 5.6 grams floats on water; sometimes for several minutes, sometimes for several hours; the duration of flotation depending on conditions to be stated in a subsequent publication.

I naturally thought that these remarkable phenomena were peculiar to aluminum, because in all the works on physics I have read it is stated that to float a metal on water it is necessary that its surface should previously be greased. (See the latest treatise on physics, by Violle; Vol. I., pt. 2, p. 679.) I found, however, that all metals from platinum of a density of 22 to magnesium of a density of 1.7 float on water when their surfaces are chemically clean.

Rings were made of aluminum, iron, tin, copper, brass and German silver. The wire of these rings is one millimeter thick and the rings are about 50 millimeters in diameter. The axis of the wire of a ring is in a plane; in other words, the rings are flat. Each of these rings has soldered to it a thin wire along a diamter and raised above the plane of the ring. On this wire is cemented a platform of thin metal. These rings are highly polished and are chemically clean.

On loading one of these floating rings, by gradually adding weights on its platform, the ring sinks deeper and deeper below the general surface of the water, till, finally, it breaks through the depresssed surface. On the form of this depressed surface (which I have plotted) depends the amount of weight per centimeter of circumference of the ring, required for the ring to break through the surface of the water. This weight, in the cases of the rings mentioned, is, on the average, 0.155 grams per centimeter, or about double the surface tension of water; because tangents to the depressed surface of the water, at the point where the rupture occurs, are vertical.

In the present stage of the research I am inclined to hold the opinion that the flotation of metals and of glass depends on a film of air which is condensed on their surfaces. The following experiments seem to sustain this opinion. If a ring made of platinum wire $\frac{4}{10}$ millimeter thick, which readily floats on water, is heated to redness and as soon as cold is placed on water it sinks. Also, when withdrawn from the water and wiped dry it again sinks when placed on the water; but after the same dried ring remains about a quarter of an hour exposed to the air then it will float. If the platinum ring, after having been heated to redness, remains in the air about a half hour and then is placed on the water it floats.

Glass behaves in a similar manner to platinum. If a rod of glass, recently drawn out in a spirit flame and just cold, is placed on water it sinks. After a freshly made rod has remained exposed to the air about a quarter of an hour it will float. If a recently made glass rod which has just sunk in water be withdrawn, wiped dry and exposed to the air for a quarter of a hour, it will float. The glass rods used in these experiments are one millimeter thick and four to five centimeters long.

Under certain conditions the ratio of the weights required to make a platinum ring break through the surface of water and through the surface of another liquid is the ratio of the surface tension of water and that of the liquid. This ratio is 1 : 1.09 in the case of water and a solution of chloride of sodium of density 1.2. Taking .077 as the surface tension of water we have 1 : 1.09= .077 : .0839. Platinum is used for such experiments because it is chemically inert to nearly all liquids.

Under certain conditions the ration of the weights required to make a platinnm ring bread through the surface of water and through the surface of another liquid is the ratio of the surface tension of water and that of the liquid. This ratio is 1:1.09 in the case of water and a solution of chloride of sodium of density 1.2. Taking .077 as the surface tension of water we have 1:1.09= .077 : .0849. Platinum is used for such experiments because it is not oxidizable and is chemically inert to nearly all liquids.

The relation that the experiments mentioned in this article have to the surface tension of water and other liquids, and to the change of surface tension on the exposure of a liquid to the air, will be discussed in a paper containing a fuller account of facts and theory than can be given in this notice.

ALFRED M. MAYER.

MAPLEWOOD, N. J., August 21, 1896.

A GALL-MAKING COCCID IN AMERICA.

THE numerous and extraordinary galls formed by Coccidæ in Australia have long excited the interest of entomologists, but so far no gall-making coccid has been de-