

### Protective Habit in a Spider.

MR. R. I. POCOCK'S interesting paper in your issue of November 16, leads me to place on record an observation I made last summer in the island of Arran. Sitting by a little clear pool in the granite of Glen Sannox, I noticed a spider whose web was spun in the heather which partly overhung the stream. On disturbing her, she dropped on to the granite a few inches above the water, and running rapidly down, entered the pool and hid under a tuft of weed. After remaining thus hidden for 2½ minutes, she returned to the surface and, reeling herself up by her thread, regained the web. Disturbed again, she repeated the action, remaining under water 1½ minutes. A puff of tobacco smoke sent her down a third time, when she remained hidden for 2½ minutes. In each case she hid in the same place, and in each case regained the nest by her thread.

I have placed the spider in Mr. Pocock's hands. He informs me that the species is *Epeira cornuta*, or possibly *patagiata*.  
University College, Bristol. C. LLOYD MORGAN.

### THE LOSS OF H.M.S. "VICTORIA."

FOUR weeks ago the Admiralty issued a minute upon the proceedings of the Court-Martial appointed to inquire into the loss of H.M.S. *Victoria*; and also a further minute upon the construction and stability of the ship, and a report by Mr. W. H. White, the Director of Naval Construction, upon such parts of the evidence given at the Court-Martial as throw light upon the causes of the foundering or capsizing of the ship.

In the first-named minute the Admiralty concur with the finding of the Court-Martial, as regards the causes of the collision with the *Camperdown*, and the distribution of blame among the officers concerned:—matters with which we shall not now attempt to deal. The other two relate to the construction, buoyancy, and stability of the ship, and discuss facts and questions relating to these points, which demand the careful attention of all who are interested in the efficiency of the Navy. These minutes deal with matters for which the Admiralty is felt to be responsible, and to be, to some extent, upon its trial. The question of Admiralty responsibility for the efficiency of the *Victoria*, and her power to withstand such a blow as she received, has been hitherto treated and discussed as though it were merely one of who designed the ship. In this case, the circumstances are somewhat peculiar, for her original designer, Sir N. Barnaby, retired from the Admiralty service in 1885, immediately after the vessel was ordered to be built, and before she was even in frame. Many alterations were afterwards made during the progress of construction, and everything considered necessary for safety or efficiency was done by others, during the five years that passed before she was finally completed. Whether the early design were good or bad, the responsibility for the ship as she was completed and commissioned, and passed into the Navy as a first-class battle-ship in 1890, surely rests with those whose duty it was to watch her construction, and to ultimately certify to her fitness for the class in H.M. service in which she was placed. The question of who was responsible for the design of the *Victoria* as it first stood, has now little more than an historical interest. That of the responsibility for completing and fitting her out for sea, and passing her into the Navy as a first-class battle-ship, is the only one of real practical importance at the present time, if it be thought necessary to discuss the matter.

This being the state of the case with regard to the question of responsibility, we can only regard the minutes relating to the buoyancy and stability of the *Victoria* as the best defence of the ship that is possible. It may be a perfectly good defence, but it is obviously *ex parte*, and can only rightly be judged as such. Had a Committee of Inquiry been appointed, these minutes represent the case that would have been laid before it by the Admiralty,

and would have been examined from various points of view, and adjudicated upon. The Admiralty has preferred to treat the public as competent judges, and to lay their case before them in a form which bears the outward semblance of a judicial decision. The minutes are, however, upon some points more in the nature of a pleading than a judgment; while they are, at the same time, much too technical and complex for any but the most competent experts to judge. It is to be regretted, in the interests of the Navy and the country, that the facts and opinions thus put forward are not referred to a competent and impartial body for examination and report.

Mr. White's report summarises the evidence respecting the behaviour and movements of the *Victoria* after she was struck by the *Camperdown*, and gives the results of calculations respecting the effect of filling compartments in the neighbourhood of the blow, which appear to agree, in the main, with the reports of observers. The calculations employed are, as he states, quite simple in character; and no one who knows the Construction Department of the Admiralty, or the men in it who perform this class of work, could doubt their substantial accuracy. An important point in connection with them is, however, the assumptions upon which they are based. Some of these may be more or less open to question; while nothing is said as to the information the officers had respecting the rapidity with which the *Victoria* might be sunk if rammed. It appears evident that no one on board imagined the ship could sink, after such a blow as she received, without giving time to close the water-tight doors; and it appears, also, that some of the water-tight doors could only be closed by going into compartments into which the sea first obtained access.

These questions, and the more general one of the light that is thrown upon the efficiency of other ships of the same class by this sad disaster, respecting which the Admiralty minutes say nothing directly, though they imply that nothing unsatisfactory is indicated, appear deserving of close and careful consideration. The following remarks will be devoted to an attempt to describe how the matter, and the light thrown upon it by the recent Admiralty minutes, strikes one who is intimately acquainted with the ships of the Navy, and has studied the technical questions which have been raised, from time to time, respecting them.

The subjects treated of in the two minutes now under consideration may be classified as follows:—

(1) The nature of the blow received by the *Victoria*; (2) her after-movements and behaviour up to the moment when she capsized and sank; (3) the extent to which water found access into the ship; (4) the effect of the water thus admitted upon the line of flotation and the stability; and (5) the lessons that are taught by various circumstances attending the loss that have come to light.

1. *The nature of the blow received by the "Victoria."*—Before the commencement of the manœuvre that immediately preceded the disaster, the ships of the squadron were steaming in two parallel lines, about 1200 yards apart, at a speed of about 8½ knots. The course was ordered to be reversed by turning the ships inwards between the lines. The *Victoria's* helm was put hard to starboard, at an angle of 35°, and the *Camperdown's* helm was put over to port, at an angle of 28°. With these helm angles the *Victoria* would turn in a circle of 600 yards diameter, and the *Camperdown* in a circle of 800 yards diameter. A collision was therefore inevitable with both ships continuing at the same speed. When both had turned through eight points, or a right-angle, they were end-on to each other, at a distance apart which was estimated at 400 to 500 yards. It was then seen that a collision was imminent, and the port engines of the *Victoria* and starboard engines of the *Camperdown*