

seventy. Then come two rows of very large suckers, the moveable disk of each an inch and a quarter in diameter, the cartilaginous ring not being denticulated. These are twenty-four in number. After these there is another group of suckers, with denticulated edges (similar to the first), and about fifty in number. Along the under surface about forty more small suckers are distributed at intervals, making in all about 180 suckers on the arm.

The men estimate that they left about ten feet of the arm attached to the body of the fish, so that its original length must have been thirty-five feet.

A clergyman here assures me that when he resided at Lymaline, on the Southern Coast, in the winter of 1870, the bodies of two cuttles were cast ashore, measuring 40 and 45 feet respectively.

More than once we have had accounts of gigantic cuttles cast ashore in different localities; but not until now have any portions of them been preserved.

By this mail I send you a photograph of the arm, it is one fourth the original in size. You will readily see the suckers at the extremity of the arm. The disks of several of the larger ones have been torn off by carelessness on the part of the captors. A few of them, however, are perfect, and the smaller ones are not injured. I shall send you also, by this mail, three or four of these suckers which I cut off, the smallest being from the very tip of the extremity and not much larger than a pin's head.

I shall be glad to hear your opinion of this fish at your earliest convenience.

It is a great pity one arm was destroyed, and it is still more to be regretted that we did not get the head of the monster.

Yours very sincerely,

M. HARVEY.

The photograph and specimens of the suckers of the creature, both forwarded by Mr. Harvey, were exhibited at the meeting. The Kraken, or Scandinavian superstition, is an exaggerated representation of one of these colossal cuttles. It existed as a cause of the occasional disappearance of islands. Denys de Montfort, who evidently disbelieved in their existence, having represented a "kraken octopod" in the act of scuttling a three-masted (by way of caricature), told Mr. DeFrance that if this were "swallowed," he would, in his next edition, represent the monster embracing the Straits of Gibraltar, or capturing a whole squadron of ships. Truth is however, at all times, stranger than fiction, as any one may see, in the present instance, who takes the trouble to compare Victor Hugo's fanciful and inaccurate description of the "devil fish," in *Les Travailleurs de Mer*, with the careful notes on a number of the same group of animals, as given above by Mr. Harvey. The cuttle-fishes are by far the most highly organized members of the great division Mollusca. By many writers they are considered as forming almost a link, as it were, between the vertebrate and invertebrate animals. The glassy internal pen of the squid, and the calcareous internal "bone" of the true cuttles, are held to foreshadow the spinal column of the higher animals. The eyes of the cuttles are large, brilliant, and more complicated in their structure than are those of some fishes. The late Mrs. Barrett Browning, probably unconscious of this circumstance, however, commences a short poem, entitled *Lord Walter's Wife*, with the following couplet:

"But why do you go? said the lady, while both sat under the yew;
And her eyes were alive in their depth, as the kraken
beneath the sea drew."
J.F.W.

TACTICAL KNOWLEDGE OF THE NAVY.

Writing of the new "Naval War Game," devised in imitation of the *Krieg Spiel* *Frazer's Magazine* points out that the usual adoption of steam as the motive power has revolutionized the tactics of battle, and so little has been done towards the establishment of new principles, that we are much in the same position as before Clerk of Eldie's twenty years of "mappery, closet wars." So long as the wind was the governing element, manœuvring generally ended when the battle began. The fight was waged with the ships in a quiescent state, but now, according to one of Commander Cyprian Bridge's excellent maxims, whilst within fighting distance, the ships must "not remain still." So that we have not only to determine what is the best tactical formation in which to approach the foe, but what are the tactical manœuvres which might naturally be expected to grow out of an onset made in a given initial formation. Even as to the smaller question of the preliminary formation, much divergence of opinion and no experience whatever exist in the British service.

The very terminology of navy tactics is unsettled. No fixed meaning attaches to the commonest terms. Seamen cannot define what is "a fleet," "a squadron," "a division;" what is the meaning of "strategy," "tactics," "manœuvres," "evolutions," etc. Whilst two or three terms are sometimes employed to express the same "formation," and nobody knows whether a "formation" is or is not the same as an "order," our latest system of grouping ships in "threes" or "fours" receiving a French name betraying alike its origin and continued forwardness of France in this subject. There are at least forty three distinct fleet evolutions, differing in character, and which requires diagrams in the general signal book for their explanation, besides collateral movements. Yet no means are adopted to familiarize young officers with all this nomenclature and warlike training. A naval college has been opened at Greenwich with much éclat, in which no place is found for the art of naval war. A professorship of field fortification has indeed been provided at that institution, but naval tactics, naval history, naval artillery, and other branches of the science of naval war find no place in our so-called naval college. No wonder that when the committee on designs of ships of war questioned twenty five distinguished officers as to the manner in which they would take a fleet into action, ten of the most experienced had no decided opinion, and five different plans were suggested by the remaining fifteen officers. Nine of these officers adopted, as their mode of attack, a formation which had no existence in the official evolutions of 1866, and which is even now tabulated only as a simple formation, unaccompanied by any directions for the alterations of course, conversion to other formations, etc., etc., which are essential to its development and practice. The uniform character of naval opinion on the question is pointedly evidenced by the reticence shown at the professional discussions held from time to time at the Royal United Service Institution. On a recent occasion, when an officer of the sister service of the

corresponding rank to Lieutenant Castle, R.N., read a paper on the tactics of three (military) arms, generals and colonels, no less known to fame than esteemed by their professional brethren, vied with one another in discussing, before a crowded audience, though from very opposite points, the subject proposed; but when a week or two later, the "Naval War Game" was brought forward in the same theatre, it was to well nigh empty benches, admirals and captains (on the active list) being as conspicuous for their absence as on previous similar occasions they have each been for their reticence. A dense fog obscures the subject, and admirals and senior captains are unwilling to acknowledge, in professional debates, that they have no knowledge to impart, no data on which to found reliable opinion. If too closely questioned, unlimited confidence in headlong bravery is courageously avowed to be their sole hope in battle. But suppose the foe to be equally brave, with a dash of tactical skill to boot? As captain P. H. Colomb, R.E., one of the first of living tacticians, puts it, "The bravest man had better be intelligently brave while he is about it."

MANUFACTURE OF 35 TON GUNS.—The manufacture of the seventeen land service "Woolwich Infant," or 35 ton guns, which were ordered from the Royal gun factories some months ago, is progressing rapidly at the Arsenal, Woolwich. Several enormous series of coils, weighing each some twenty two tons, and which are intended for these guns, have been lately removed from the reverberatory furnaces in the coiling shed, and lie outside ready for welding. The tubes of cast steel, three feet longer than any hitherto manufactured, have been received from Messrs Firth & Co., Sheffield, and will shortly be turned to receive the superincumbent coils. The appearance of the new guns when completed will be an immense improvement upon that of the present naval 25-ton gun. The addition of three feet to the chase, making it in all 19 feet from breech to muzzle, takes away from the stumpy, unwieldy look of the original weapon. But the improvement is not only in appearance. It is an established fact that a calibre of 12 inches with pebble powder requires a greater length of bore than 13 feet—the length given to the "infant"—for the expansion of the powder gases when such charges as 110lb and a 10lb or 130lb of powder are employed. And the new gun meets this requirement exactly, for the elongation of the powder gas waves is fully provided for by the excess of three feet given to the bore. Experiments with the 10 inch rifled gun show that the entire force of these waves is not exerted until the projectile has started several feet; hence it is necessary in order to obtain the full effect of the powder, to give a considerable length of bore, and with every increase made in the charge of powder to increase correspondingly that length. It is anticipated that no more of the earlier pattern of 35 ton gun will be constructed.

The Spanish steamship *Murillo*, which was seized at Dover for running into and sinking the British emigrant ship *Northfleet* when about to leave for Australia, and recklessly sacrificing several hundred lives, has been condemned, and sold November 5.