

TABLE B.  
French Fleet Engaged in the Action of April 27-28.

	Tons.	H. P.	Guns.	Men.
Battleship—				
Amiral Baudin.....	11,380	8,320	15	500
Courbet.....	9,652	8,112	14	670
Devastation.....	9,639	8,154	14	685
Formidable.....	11,441	9,700	15	500
Hoche.....	10,650	11,300	20	660
Marceau.....	10,581	12,000	21	660
Amiral Duperre.....	10,487	8,120	19	664
Caiman.....	7,200	6,000	6	332
Friedland.....	8,824	4,428	16	676
Indomptable.....	7,168	6,605	6	332
Richelieu.....	8,767	4,240	19	720
Trident.....	8,456	5,083	16	730
Colbert.....	8,457	4,652	16	706
Terrible.....	7,713	6,230	6	332
Redoubtable.....	8,857	6,071	14	700
Vauban.....	6,150	4,561	11	440
Bayard.....	5,986	4,538	12	450
Cruiser—				
Cosmao.....	1,877	6,000	4	150
Troude.....	1,877	6,000	4	150
Lalande.....	1,877	6,000	4	150
Sfax.....	4,502	6,522	16	473
Jean Bart.....	4,122	8,000	10	360
Cecille.....	5,766	9,600	16	486
Faucon.....	1,240	3,233	3	134
Vautour.....	1,280	3,391	5	134
Condor.....	1,240	3,582	5	134
Wattignies.....	1,310	4,000	5	140
Torpedo gun vessels—				
Dragonne.....	395	2,000	Q. F.	63
Dague.....	395	2,000	"	63
Leger.....	450	2,200	"	63
Bombe.....	395	2,000	"	63
Levrier.....	450	2,200	"	63

And the first-class torpedo boats Ayela, Audacieux, Coureur, Ouragany, Temeraire, Kabyle, Orage, Aventurier, and Eclair.

haved splendidly, and worked at the guns with admirable steadiness, the game was up. A torpedo hit us on the port bow, just under the forward sponson; and in an instant, or rather as soon as we realized what had happened, we knew that the dear old Nile was done for. The shock was tremendous, and threw us all down, for the ship's bows rose violently into the air and trembled as if they had been wrenched and twisted by some angry giant. But bruised and bloody as we were, we were soon up again. The entrance to the conning tower was half blocked with the debris of boats and booms, yet the captain, in spite of his wound, managed to struggle out on deck, and I followed. Several boats were by this time almost alongside, and as we appeared, a French lieutenant in one of them coolly removed his hat, and made a motion as if to ask whether we surrendered. The captain fired his revolver at the gallant fellow, and, even as he did so, fell back, shot through the chest by a bullet from a machine gun. 'Don't haul it down while we float,' he cried, as he lay writhing in his last brief agony: 'Remember what they will say at home.'

"We did not haul it down. We drove the boats off, and gave them a weak cheer as they went, but the ship was at that time settling rapidly down by the head, with a frightful heel to port. The boats were ordered to be got out. They were, however, all knocked to pieces. We did our best also to steam back into the still battling fleets, feeling that no fate could be much worse than the one which immediately threatened us; but the water had got into the stokeholds, owing, I suspect, to some of the bulkheads having given way under the pressure, and we could not move. Just when everything seemed most hopeless I saw what looked like a small cruiser rapidly making for us, with all her lights showing. But she came too late for most of us. While she was still a full mile away the Nile's stern rose high out of the water, so high as to send everything and everybody on deck adrift, and then, with a great gurgle, the ship dived down bows first.

"I have no further recollection that helps me to explain how, when the day was beginning to dawn, I found myself clinging to a splintered grating, alone upon the sea. I was dizzy and chill and sore from head to foot, and I was almost naked, but I clung on mechanically. Indeed, my arms were so stiff that it seemed that I could scarcely have unclasped them, even if I had wished to do so. As the sun rose I caught sight of a vessel under steam, less than half a mile from me; and although I was able to make no effort to attract attention, I was in another quarter of an hour so fortunate as to be picked up by a boat which was sent for me by the commander of the Agostino Barberigo, and to be taken on board by the kindly Italians. They tell me that at first I could give no account of myself, and that I could neither speak nor stand, but they treated me so well that by midday I recovered.

"My first question was, naturally, about the fleet. Terrible, even beyond my apprehension, is the fragmentary story which my rescuers told me. The Agostino Barberigo had been almost within gunshot during the action, which had lasted for less than an hour. After the battle her commander had hailed the French ironclad Amiral Baudin, and had learnt that, of our ten battleships, five—namely, the Nile, Agamemnon, Edinburgh, Inflexible, and Collingwood—had been either sunk or compelled to strike, and that of the remainder, two at least, although they had temporarily got away, were entirely disabled. One of these was understood to be the Victoria, in which quite early in the engagement there had, apparently, been some serious accident. The fate of the Polyphemus was unknown, but she had rammed or torpedoed and sunk the Trident. The Australia had got away, but the Undaunted, toward the end of the action, had made a gallant endeavor to ram the Vauban, and although she had considerably damaged her, had been sunk, firing as she went down. The Surprise had got away, but was on fire when last seen. The Fearless, after colliding with one of our own vessels and having her bows stove in, had been taken. The Scout had

rammed and sunk the cruiser Sfax, but had herself gone down, though I am glad to be able to add that most of her officers and crew are safe on board the cruiser Cecille. Finally, in addition to the Trident and Sfax, the French are said to have lost the Vautour cruiser and the Kabyle—torpilleur de haute mer—as well as two small torpedo boats.

"But the victory, which is an undoubted one, lies with them. Our Mediterranean fleet, as such, exists no longer. Half of it has been destroyed or taken; the other half is disabled, and in all probability scattered. Never before in all her history has England experienced so complete a disaster upon the sea, and it can be but slight satisfaction to us to know that to purchase this grand success our enemies have spent an old second-class ironclad, a large but not very new cruiser, and three or four small craft, even when we know also that many of their other vessels must be severely damaged.

"When I was picked up, I was nearly ten miles from the scene of the action; and so far as I know, I am the only one of my ship's company that has escaped, though one cannot but trust that others were picked up by the cruiser which was approaching us when we went down. The Agostino Barberigo had, however, on board about thirty bluejackets and a wounded sub-lieutenant, whom she saved when the Agamemnon sank; and it is certain that in the French fleet, the greater part of which put back to Toulon, there are many other survivors.

"I can add no more. As a British officer who as a volunteer has tried to do his duty I cannot, nevertheless, avoid expressing the opinion that if we had had a proper Mediterranean fleet—one equal or superior to that of the French—this grievous disaster would not have occurred. We allowed ourselves to be lulled to sleep by the peaceful aspect of affairs here; and the unforeseen storm has found us unprepared to cope with it. Such fleet as we had was weak, not only numerically, but also in armor and armament; for enormous guns and partial belts have proved a failure. We have

12 ft., and weigh up to 1,200 pounds, leave their submarine hiding places in the bottom of the Mediterranean, and travel in large shoals toward the coast for breeding in the sea weed. Before the arrival of the fish, the shores are crowded by fishermen and spectators, and a watchman is perched on the outer end of a ladder-like frame, which extends from the coast far out into the ocean, as shown in the accompanying engraving taken from the *Illustrirte Zeitung*. The watchman on this tower can readily detect the coming of the fish by their striking against nets and causing a disturbance on the water. The nets are set in such a manner as to form labyrinthic chambers extending from the coast about a mile out into the ocean. As soon as the watchman discovers the approach of the fish, he gives the signal to those on shore, and a general rush is then made for the boats, which are rowed out rapidly to the sea, to assist in driving the approaching shoal into the nets.

The fish pass through the various chambers formed by the nets, until they finally pass through the second last one, called the golden chamber, which has but one exit, leading into the death chamber. As soon as the manager in charge finds that a sufficient number of fish have entered the last chamber, then he gives a signal to draw in the outer nets from the sea and shore to close the outermost chambers, to prevent the fish from escaping to sea. The fish are then killed in the death chamber by means of iron-clad clubs, wielded by the fishermen. During a season the above is repeated from about ten to fifteen times at one and the same place, and as many as 600 fish have been caught in one season.

The tunnies have appeared along the Italian, Austrian, and Tunisian coasts for about the last 130 years, but are now rather rare along the Spanish coast, which is attributed to the earthquake of 1755, at which time a sinking of the Spanish coast took place, and the fish were driven away.

A large number of such watch towers, illustrated in the accompanying engraving, are erected along the Is-



TUNNY FISHING ON THE MEDITERRANEAN.

been pinning our faith too much to these partial water-line belts and to guns of monstrous proportions. The only one of the Sanspareil's big guns that was fired broke down. The other could not, for some reasons which I have not been able to discover, be fired at all. And I am informed, by a seaman who belongs to the Victoria, but who had been lent as a signalman to the Agamemnon, that the accident already alluded to as having occurred in the Victoria was, in fact, the bursting of a 110 ton gun in her turret. If I can, ere I start for home, learn any further details of our unexampled misfortune, I will lose no time in telegraphing them. I am aware that this account leaves much to be desired. The awful circumstances in which it is written must be my excuse. The fact that I have, in a short hour, lost, as I cannot but believe, most of my shipmates and dearest friends, gives me personally such poignant pain that I can barely concentrate my thoughts; but even more am I overwhelmed by the consciousness of the irreparable loss in officers and material that has fallen upon the country. Would that half the gallant fellows who perished to-day were still at the call of England; for sorely will she need them."

Thus the bolt fell from a clear sky, and within a few hours the two most powerful naval nations of the world found themselves engaged in deadly struggle.

Elsewhere in its issue of the Black Wednesday, the *Times* gave particulars (see Table B), derived from other sources, of the victorious French fleet. It also mentioned, in a leading article, that the telegraphic dispatch above quoted had been sent to it by Lieutenant Thomas Bowling, R.N., an officer on half pay, who had been present as a guest in the ill-fated Nile. And in its later edition it contained a great deal of bad news from a spot far less distant than the Mediterranean.

TUNNY FISHING ON THE MEDITERRANEAN.

The tunny (*Thynnus vulgaris*) is caught along the Adriatic coast, near Abbazo (Istria, Austria), during the end of April and the first part of May. At this time the tunnies, which attain a length of from 8 to

trian coast from Abbazo along the coast road leading to Volosca. As is well known, the flesh of the tunny resembles veal, is delicate, and has been in demand from time immemorial. T. G. H.

[FROM 'THE N. Y. SUN.']

THE SCIENCE OF FISHES.

By J. S. KINGSLEY.

EVERY year, when the weather becomes warm, and the annual pilgrimage begins to the summer resorts, students from all parts of the country, from California and Dakota and the Carolinas, turn toward Wood's Holl to study in the well-equipped Marine Biological Laboratory there. This place is admirably adapted for its purposes by nature as well as by its buildings and equipment. No richer spot for collecting exists on the whole Atlantic coast, while the student can have his summer relaxation here at the same time that he is adding to his store of knowledge. The south winds, which elsewhere are so hot, come to the south shore of Massachusetts straight from the Atlantic, and are consequently cool and refreshing. On the other hand, the water itself is warm, so that here, as at Newport, one can bathe without that shock which so frequently occurs in the colder waters north of Cape Cod.

There are two large laboratories at Wood's Holl. One of them, the United States Fish Commission, is the property of the general government. Here, during the summer, students are at work upon the various problems directly or indirectly connected with the supply of food fishes. In the winter the students are mostly gone, but the commission is not idle. Its energies are now turned to the hatching of cod and lobsters and other food fishes. The eggs are obtained by millions, and are placed in ingeniously arranged hatching jars, so that they are under the most favorable conditions. Then, when the young are able to shift for themselves, they are turned loose in the sea to grow and fatten, and perchance to be caught for food.

The fish commission is a government institution, and to study there one must have an invitation from the

commissioner; the other Wood's Holl station, the Marine Biological Laboratory, is open to all upon payment of the proper fees. The fish commission is chiefly for the solution of economic questions connected with food fishes; the Marine Biological Laboratory is devoted to pure science.

The building of the Marine Biological Laboratory is simple and without any architectural pretensions. A rectangular two-story building about 30 by 60 feet, with an L, 20 x 40, can be made severely plain, and yet this shingled structure in one way exhibits true architectural merit, in that it is well adapted for its purposes. At the first sight one is struck by the size and number of the windows; and, considering the nature of the work done, there is none too much light. The main entrance leads directly into the lower laboratory, which occupies nearly the whole of the ground floor. Along either side of this large room are arranged large laboratory tables, each accommodating four students, while in the center of the room is another table with the aquaria, always of interest to the visitors.

The animals in these aquaria are changed almost daily. This change is not intentional, but follows from the nature of the work done. These tanks serve as reservoirs for the animals studied, and as the students are working—now on lobsters, now at starfishes, and again upon clams—the stock on hand must vary. Then, again, any strange or unusual form taken is placed here on exhibition, so that one day may be seen here sticks covered with goose barnacles, each one, as Huxley expresses it, kicking its food into its mouth with its feet; another day there are numerous squid, with their constantly changing hues, darting hither and thither by their peculiar force pump propeller. One year the tanks contained almost constantly one or more of the beautiful Portuguese men-of-war, the float colored red and blue, while below the green tentacles are in constant motion. But beware of these beautiful streamers, for where they touch the skin they raise a bright red ridge which smartens as if burned.

The students in this lower laboratory are elementary workers. Some are college students, doing extra work in vacation time; some are teachers in high schools, while not infrequently dignified college professors have been glad to come here and obtain instruction. The non-scientific reader may be interested in the way in which they study.

Each morning there is a lecture in the adjacent lecture room by some one of the teaching force. This may be either a somewhat detailed account of the structure of some animal or plant, to be studied later by each student in the laboratory, or it may be an account of the relatives and relationship of some form already studied, for knowledge gained here is to be valued accordingly as it is comparative.

After the lecture, which is usually about an hour long, the students return to the laboratory and begin the day's work. Suppose it be some large animal like a lobster which is to be studied. It is first examined from every side. Its legs are pulled off and studied, then the jaws are compared with the legs, and then the feelers with both legs and jaws, and from these the instructors strive to lead the students to work out for themselves the laws of structure upon which a lobster is formed.

When the outside has been mastered, the internal organs are studied. The way the muscles act, the peculiar grinding mill in the stomach, the brain and the nerves are all investigated with the scalpel. When the heart and blood vessels are taken up, the student is shown how to fill them with starch and vermillion, so that the finest tubes can be traced by their bright red color into every part of the body. In the same way star fishes and sea urchins, clams and oysters, sharks and the like are dissected and studied.

In all this work the student is made to draw, more or less artistically, all the parts seen, for it is a well-known fact that when a person has to draw exactly what he sees, he will see far more than he otherwise would, especially when the accuracy of the drawing may be questioned later by the instructor.

When the animals are small, simple dissection is no longer sufficient, and the compound microscope is necessary. With these the laboratory is well equipped, the instruments being made by the best makers. If the animal be transparent, all that is necessary is to place it in a watch crystal of salt water under the microscope, when the principal points of structure are readily seen; but if, as is frequently the case, the animal be opaque, the study is complicated.

This is the way the difficulty is got around. The animal is killed properly by certain chemicals and hardened by others, and is next imbedded in a block of paraffine so that the object lies like the wick in a candle. All this is necessary because fresh tissue cannot be easily cut. Now it can be cut with a razor into slices of extreme thinness. To aid in this "section cutting" instruments known as microtomes have been invented, and, provided the knife is sufficiently sharp, sections a fifteen-thousandth of an inch thick can be made, but usually about one two-thousandth of an inch is sufficient. These sections or slices are placed on a bit of glass, the surrounding paraffine is washed away with turpentine, and the sections are then studied with the compound microscope.

The upper floor of the laboratory is devoted to the more advanced workers. Some of these are persons of national reputation, who are here passing the summer in deeper study into the secrets of nature; others are just beginning the work of original investigation, and have not acquired the ability of going alone. These latter are in part graduates of the lower laboratory; in part those who have done equivalent work elsewhere. They need constant attention and advice. Think for a moment, you who have never worked in a biological laboratory, of how you would go to work to find out something new. What would you take up? How would you work at it? And how would you recognize a new fact when you had found it? This portion of the laboratory aims to supply just this training, and that such training is needed is amply shown by many of our scientific journals.

Twenty of these students can be accommodated in the large rooms of the upper floor, and each one is as much under the charge of the instructors on that floor as are the beginners down stairs. Each one on entering the laboratory has his work mapped out for him. The problem is assigned, the methods of study suggested, and with constant assistance and advice the student

is led to find out the facts in the case. The instructor has also to show the beginner how to use the literature and how to find out whether his facts are new, and also what their bearings may be. In this assignment of work good judgment must be exercised to pick out problems within the power of the student, and also those which will return adequate results, both in new facts and in training as well.

Leading from the main laboratory are twenty-four private rooms, each equipped with its own aquarium, glassware, china, cuts, etc., where the investigators who no longer need instruction can carry on their studies undisturbed by outsiders, and, if necessary, in secrecy. It not infrequently happens that two workers have attacked essentially similar problems, and thus, of course, there is naturally considerable rivalry, and each wishes, until ready for publication, to keep his results from the others.

If it were possible to describe in detail the work done by the investigators, the account would prove exceedingly dry to the layman. An example, however, may be outlined to serve for all.

Only a few years ago most students were engaged in describing new species or in studying the structure of those already described. Now, one great problem is, How does that structure arise? So at Wood's Holl the tracing of the changes from the egg to the adult naturally occupies a prominent place. Each animal has its own peculiarities of development, and so only a general outline can be given, in which only the salient features can be touched upon.

The student obtains the animals whose history he wishes to trace and from them obtains the eggs and milt. These are mixed together, and from this moment every instant of the history is of interest. Most of the eggs studied are greatly different in general appearance from the familiar egg of the hen. They are usually small, frequently microscopic in size, while many of them are perfectly transparent. In this latter case certain features of development are studied with comparative ease, for, placed beneath the microscope, most of the internal changes can be readily seen. In other eggs which are perfectly opaque only the modifications of the external surface can thus be seen, and for internal structure the same process of section cutting described above must be resorted to.

The typical egg we are describing is a mere sphere of that much talked about and yet little understood substance, protoplasm. After it is fertilized it divides into halves, and each half into quarters, and so on, again and again, until the egg is converted into a ball of small spheres or cells, the whole much resembling a blackberry in its general appearance. Then these cells become arranged into layers, an outer which is to grow into skin and nervous system, an inner which will make stomach, etc., and a middle layer, to be later differentiated into muscles, blood, blood vessels, fat, etc., and, in the case of vertebrates, into bone and cartilage.

As has already been said, in this embryological study section cutting plays an important part, and the work soon acquires great facility in all its many steps. It is not a difficult task to cut an egg one one-hundredth of an inch in diameter into fifty or a hundred sections and have these sections pass through the egg in any desired manner. Plain sections show but little under the microscope, but the naturalist has found out that the different portions of every animal and every plant differ considerably in their chemical constitution, so that if placed in certain staining fluids one part will be colored while another will not. Thus solutions of carmine and logwood will render visible in each of the little balls or cells of the egg described above a part which stains more deeply than the rest.

This is called the nucleus, and the more it is studied the more important does it appear to be. It is apparently the bearer of all hereditary tendencies. Again, solutions of gold properly used stain nerves bright purple, so that the students can trace their finest terminations; ozonic acid blackens fat, and blue de Lyon renders the most minute bit of bony tissue bright blue. So, naturally, this staining plays a most important part in investigation.

For much of the material used the students do their own collecting. This gives them an outing and also serves to teach them something of the habits of marine animals. The laboratory has rowboats, sailboats and a fine steam launch. The latter is in daily use, conveying students to Maushon and the other islands of the Elizabeth group, dredging in Vineyard Sound, or visiting the fish ponds scattered along Buzzard's Bay.

Dredging is an interesting operation, for it always is more or less of a lottery. The launch steams out into the sound until it reaches some point which seems favorable, and then the dredge is put down. This is a rectangular iron frame with sharp edges to scrape the bottom and a bag behind to catch everything that is scraped up. When the dredge is down the launch steams along slowly, and after a short time it is drawn to the surface and the contents of the bag poured into sieves, and after washing away the mud, etc., the remainder is carefully picked over and the treasures either immediately preserved or taken back to the aquaria in the laboratory. Usually the dredge will contain a considerable variety of forms, but occasionally a haul will show only one or two species.

The daily life of the students is easily described. They find rooms with the various families in the village, while the laboratory runs a mess hall, where all obtain their meals. The laboratory is open daily from 7 or 8 in the morning until 10 or later at night.

The general outline of the work has been given, and there are but few things to interrupt it. Among these is the daily service by most of the students, and besides there are given once or twice a week a course of evening lectures by the teaching force of the laboratory, or by some visiting naturalist who chances to be present. These lectures are highly regarded, and rightly so, for nowhere else in America has ever been given a course of scientific lectures by such masters as here.

The statistics of the laboratory are here summed together. It is a national rather than a local institution, as is seen by the distribution of its students. In the four years that the laboratory has been open 135 workers have been present, coming from twenty-three States, from Canada and Japan. The laboratory is rapidly growing. The first year it accommodated seventeen, last year seventy-one workers. This year

in addition to the building has been made as large as the original structure. It depends for its support upon the fees of the students, upon the interest of a very small endowment, and upon the subscriptions of friends interested in science. The fees are, for the elementary department, \$30; for the investigation department, \$50, for the season. The teaching force do their work largely as a labor of love. They are mostly professors and teachers in colleges and universities, who, while their colleagues are enjoying a vacation, are continuing here the same instruction that they have been engaged in for the whole year.

Such is the Marine Biological Laboratory to-day. The laboratory of the future, so its friends think, will be a well endowed station for research, which will be open winter and summer with its regular corps of investigators, with every facility for investigation and publication, in short, a station second to none in the world. For such the beginning has already been made. Land is already bought and the foundation of the endowment laid.

In closing, a word must be said to those to whom the laboratory owes its present shape and progress. Without making invidious distinctions, we may say that to Prof. Alpheus Hyatt it owes its inception, to the Woman's Educational Association of Boston it owes the funds which gave it a start, and to Dr. C. O. Whitman of Clark University, recently appointed to Chicago University, it is indebted for its able direction. There are also many more who have worked as disinterestedly as these for its progress and welfare.

#### WHALING IN THE NORTH.

In the old times when navigation was accomplished by means of sailing vessels, before they had been deprived of the good sailors by the ever-increasing number of steamers, a rich profit was made by following the sea and in the fisheries. Chief among the latter was whaling, which, at that time, provided a very profitable occupation for many populated districts of the North, for there were immense numbers of whales in the Arctic Seas. The Norwegians, Danes, English, and Dutch devoted themselves to this business. On account of the icebergs encountered, the bows of the sailing vessels were protected by double planking, and later on by iron armor. The ships carried many boats and a large crew, and after a whale had been sighted from the vessel he was followed up by the small boats. The whale was approached, the man in the bow of the boat threw a harpoon attached to a line, and when this struck the whale the greatest skill and care were required to avoid, on the one hand, a blow from the animal's tail, and on the other hand to provide for the smooth running out of the line, to prevent injury of the boat. The wounded whale would dive rapidly into the depths of the sea, and there was danger that he might carry the boat with him, or, at least, upset it. As soon as the whale returned to the surface for air he was harpooned again, and this was continued until he was so exhausted that it was possible to fasten him alongside of the vessel. Now the cutting up began, blubber and whalebone were taken on board, and as soon as the cargo was large enough the ship started on the homeward voyage. Train oil made from the blubber and whalebone are the chief products obtained from whaling.

After the introduction of steam navigation whaling was carried on by means of steamers that were specially prepared for the work. The improved methods made available by the use of these vessels and new apparatus have rendered the pursuit very attractive. During his recent journey to the North, the Emperor William went on a whaling expedition on one of these new vessels.

Our engraving illustrates the new methods. Fig. 1 shows the slaughtering grounds to which the whale has been towed, as shown in Fig. 4. The harpoon, Fig. 2, is no longer thrown by hand, but is fired off from a gun arranged in the bow of the vessel. The head of the harpoon is provided, in addition to the barbs, with an explosive charge, thus increasing the injury caused by the harpoon, so that the whale will be much more quickly exhausted. After a whale has been taken to the slaughtering grounds the first thing to be done is to remove the valuable whalebones, of which every whale has between three hundred and four hundred. Fig. 6 enables us to realize how small a man looks when in the jaws of a whale. The other figures show the different manipulations—Fig. 8, the bringing in of the blubber, and Fig. 7 the train oil refinery on land—and the remains of the whale are also shown. These are used for the manufacture of guano.

The most exciting moment of a whale hunt is, of course, that in which the vessel comes within shooting distance of a whale or a school of whales. Slowly the bow of the ship is brought nearer to the unsuspecting creature, the harpoon gun is prepared for firing, a man stands ready, and as soon as aim has been taken the gun is fired. When the harpoon has struck the charge in its end explodes, and there is a shower of pieces of fat and flesh, and the sea is covered with red blood. If the men are fortunate the matter is settled by this one shot, and the whale is in the power of the vessel that is following him rapidly and surely.

The number of whales in the Arctic Seas has greatly decreased, in consequence of the great destruction of the animals, and it has been necessary to seek new hunting grounds in the Antarctic Seas and the Indian Ocean. The interest in whaling has decreased as substitutes for whale oil, which was formerly so highly prized, have been found that can be used for lubricating and for other industrial purposes. It will easily be understood that the profit from a single whale is very large when it is known that one which is about 59 feet long weighs 140,000 lb. and gives 60,000 lb. of blubber—from which 48,000 lb. of train oil can be made—and 3,000 lb. of whalebone.—*Illustrirte Zeitung*.

THE kola nut is rapidly increasing in favor as an indispensable adjunct to a traveler's kit. The French Alpine Club has just adopted it as a stimulant and nutrient in their mountain-climbing expeditions. The nut has, it is stated, been found to act most usefully in strengthening a person's "breathing powers" and keeping off muscular fatigue. The German military authorities have, it is said, determined to employ it in the German army. The acting principle of the nut is caffeine.