The museum and batteries at the Point were then visited in turn, and thoroughly examined and even criticised; but the general impression was that the apparatus and museum were a fair exposition of the progress of the art of modern warfare in this country, and well adapted to the teaching of practical work in torpedo defences. The station at Willet's Point is almost an advanced engineers' school, where young engineers graduating from West Point are sent for a course of engineering instruction, particularly in relation to torpedo-work.

Before leaving the Point, three torpedoes were exploded about three hundred feet distant from the shore for the benefit of the excursionists. The first one, containing about fifty pounds of mortar-powder, shot a column of water about one hundred feet into the air; but the second, containing fifty pounds of dynamite, not only doubled the distance, but seemed to reach bottom, judging from the discoloration of the surrounding water. The third and last, containing one hundred and fifty pounds of mortar-powder, caused a terrific report, and the flame which showed above the surface seemed to indicate that the torpedo had not been submerged deep enough.

In the evening, after the return of the excursionists, a reception and collation were tendered the visiting members by the Engineers' Club.

At the Thursday session the following papers were read and discussed: "Indicator Rigging for Compound Engines," by Fred. W. Parsons; "A New Recording Pressure-Gauge," by W. H. Bristol; "General Solution of the Transmission of Force in a Steam-Engine," by D. S. Jacobus; "Street-Railway Car Gear for Modern Speeds," by S. J. MacFarren; "The Comparison of Indicators," by J. Burkitt Webb; "The Cards from the Pawtucket Pumping-Engine with and without Jacket," by James E. Denton; "How to use Steam Expansively in Direct-Acting Pumps," by J. F. Holloway; "Cost of Steam and Water Power," by C. T. Main; and "Graphical Analysis of Reciprocating Motions," by Oberlin Smith. After the reading of these papers, the following resolution was unanimously adopted: "*Resolved*, That the American Society of Mechanical Engineers cordially indorses and heartily urges the holding of the proposed great international exhibition in this country in the near future to celebrate the four hundredth anniversary of the discovery of America."

In the evening the society's guests and members visited the American Institute Fair by invitation.

On Friday the engineers visited Elizabethport, N.J., where they examined the works of the Singer Manufacturing Company and the Babcock and Wilcox boiler-works.

President Towne, in closing the session, made a proposition concerning the world's fair, to the effect that the society had approved of his statement that additional time was needed to make the fair a success, and that his proposition was to have a grand celebration and the unveiling of a monument of Columbus on the date of the four hundredth anniversary of the discovery of America, and then open the world's fair in May, 1893.

The officers elected for the ensuing year are as follows: president, Oberlin Smith of Bridgeton (N.J.); vice-presidents, Joel Sharp of Salem (O.), George W. Weeks of Clinton (Mass.), De-Volson Wood of Hoboken (N.J.); treasurer, William H. Wiley of New York; managers, J. E. Denton of Hoboken (N.J.), C. W. Nason of New York, H. H. Westinghouse of Pittsburgh (Penn.).

STANLEY AND EMIN.

MR. MARSTON of Sampson Low & Co., London, has received a letter from Henry M. Stanley, dated South End Victoria Nyanza, Sept. 3, from which the following extracts are taken: —

"The rebels of the Emin government relied upon their craft and on the wiles of the 'heathen Chinee,' and it is amusing now to look back and note how punishment has fallen on them. Was it Providence, or was it luck? Let those who love to analyze such matters reflect on it. Traitors without camp, and traitors within, were watched, and the most active conspirator was discovered, tried, and hanged.

"The traitors without fell foul of one another and ruined themselves. If it is not luck, then it is surely Providence in answer to good men's prayers.

"Far away, our own people, tempted by their extreme wretchedness and misery, sold our rifles and ammunition to our natural enemies, the Manyema, the slave-traders' true friends, without the least grace either of bodies or souls. What happy influence was it that restrained me from destroying all concerned in it? Each time I read the story of Nelson's and Parkes's sufferings I feel vexed at my forbearance, and yet again I feel thankful for a higher power than man's which severely afflicted them with cold-blooded murders by causing them to fall upon one another a few weeks after the rescue and relief of Nelson and Parkes.

"The memory of those days alternately hardens and unmans me. With the rescue of Emin Pacha, poor old Casati, and those who preferred Egypt's flesh-pots to the coarse plenty of the province near Nyanza, we returned; and while we were patiently waiting, the doom of the rebels was consummated. Since that time of anxiety and unhappy outlook I have been at the point of death from a dreadful illness. The strain had been too much; and for twenty-eight days I lay helpless, tended by the kind and skilful hands of Surgeon Parkes. Then little by little I gathered strength, and finally gave orders for the march for home.

"Discovery after discovery in this wonderful region was made, — the snowy ranges of Ruevenzeni, the Cloud King or Rain Creator, the Semliki River, the Albert Edward Nyanza, the plains of Noovgora, the salt lakes of Kative, the new peoples of the Wakonju or Great Mountains, the dwellers of the rich forest region, the Awamba, the fine-featured Wasonyora, the Wanyoro bandits, and then Lake Albert Edward, the tribes and shepherd races of the eastern uplands, then Wanyakori, besides the Wanyaruwamba and Wazinja, until at last we came to a church whose cross dominated a Christian settlement, and we knew we had reached the outskirts of blessed civilization."

Mr. Mackinnon, the chairman of the Emin relief committee, has also received a letter from Stanley. It is dated Aug. 5, and was written at Kafurro, an Arab settlement on the Karagwe. It begins, "My last report was sent off by Salim Ben Mohammed in the early part of September, 1888. Over a year full of stirring events has passed since then. I will endeavor to inform you what has occurred." Stanley goes on to recount the arrangements made by him to meet Emin, and, after describing how he hunted up the missing rear column, continues, —

"I have already told you that the rear column was in a deplorable state; that out of the one hundred and two members remaining I doubted whether fifty would live to reach the lake; but, having collected a large number of canoes, the goods and sick men were transported in these vessels in such a smooth and expeditious manner that there were remarkably few casualties in the remnant of the rear column. But wild natives, having repeatedly defeated the Ugarrowwas raiders, and by this means discovered the extent of their own strength, gave considerable trouble and inflicted considerable loss among our best men, who had always to bear the brunt of the fighting and the fatigue of paddling. However, we had no reason to be dissatisfied with the time we had made.

"When progress by river became too tedious and difficult, an order to cast off canoes was given. This was four days' journey above the Ugarrowwas station, or about three hundred miles above Banalaya. We decided, that, as the south bank of the Ituri River was pretty well known to us, it would be best to try the north bank, although we should have to traverse for some days the despoiled lands which had been a common centre for the Ugarrowwas and Kilongalangas bands of raiders. We were about one hundred miles from Grassland, which opened up a prospect of future feasts of beef, veal, and mutton, and a pleasing variety of vegetables, as well as oil and butter for cooking."

"On Oct. 30, having cast off the canoes, the land-march began in earnest, and we two days later discovered a large plantain plantation in charge of Dwaris. The people flung themselves on the plantains to make as large provision as possible for the dreaded wilderness ahead. The most enterprising always secured a fair share, and twelve hours later would be furnished with a week's provision of plantain flour. The feeble and indolent revelled for the time being on an abundance of roasted fruit, but always neglected providing for the future, and thus became victims to famine after moving from this place.

"Ten days passed before we reached another plantation, during which we lost more men than we had lost between Banalaya and Ugarrowwas. Small-pox broke out among the Manyema, and the mortality was terrible. Our Zanzibaris escaped the pest, however, owing to the vaccination they had undergone on board the 'Madura.' We were now about four days' march above the confluence of the Ihuru and the Ituri Rivers, and within about a mile from Ishuru. As there was no possibility of crossing this violent tributary of the Ituri or the Aruvimi, we had to follow its right bank till a crossing could be discovered. Four days later we stumbled across the principal village of the district, called Andikumu. It was surrounded by the finest plantation of bananas and plantains we had yet seen, which all the Manyemas' habit of spoliation and destruction had been unable to destroy. There our people, after severe starvation during fourteen days, gorged themselves to such excess that it contributed greatly to lessen our numbers. Every twentieth individual suffered from some complaint which entirely incapacitated him for duty.

"The Ihuru River was about four miles south-south-east from this place, flowing from east-north-east. It was about sixty yards broad and deep, owing to heavy rains. From Andikumu six days' march north-east brought us to another flourishing settlement, called Indeman, situated about four hours' march from a river supposed to be the Ihuru. Here I was considerably nonplussed by a grievous discrepancy between native accounts and my own observations. The natives called it the Ihuru River, and my instruments and chronometer made it very evident it could not be the Ihuru. We knew finally. After capturing some Daris, we discovered it was the right branch of the Ihuru, called the Dui River, this agreeing with my own view. We searched, and found a place where we could build a bridge across. Bonny and our Zanzibari chief threw themselves into the work, and in a few hours the Dui River was safely bridged. We passed from Indeman into a district entirely unvisited by Manyema."

Here the writer describes daily conflicts with the Wambutti dwarfs, which he found very numerous in this region. The Wambuttis clung to the north-east route, which Stanley wanted to take. Accordingly, he went south-east, and followed elephant-tracks. He says, "But on Dec. 9 we were compelled to halt for forage in the middle of a vast forest, at a spot indicated by my chart to be not more than two or three miles from Ituri River, which many of our people had seen while we resided at Fort Bodo. I sent one hundred and fifty rifles back to a settlement that was fifteen miles back on the route we had come, while many Manyema followers also undertook to follow them. I quote from my journal part of what I wrote on Dec. 14, the sixth day of the absence of the foragers:—

"'Six days have transpired since our foragers left us. For the first four days the time passed rapidly, I might say almost pleasantly, being occupied in recalculating my observations from Ugarrowwas to Lake Albert down to date, owing to a few discrepancies here and there, which my second and third visits and duplicate and triplicate observations enabled me to correct. My occupation then ended, I was left to wonder why the large band of foragers did not return. On the fifth day, having distributed all the stock of flour in camp, and having killed the only goat we possessed, I was compelled to open the officers' provision-boxes and take a pound pot of butter, with two cupfuls of my flour, to make an imitation gruel, there being nothing else save tea, coffee, sugar, and a pot of sago, in the boxes.

"'In the afternoon a boy died, and the condition of a majority of the rest was most disheartening. Some could not stand, falling down in the effort to do so. These constant sights acted on my nerves, until I began to feel not only moral but physical sympathy, as though the weakness was contagious. Before night a Mahdi carrier died. The last of our Somalis gave signs of collapse, and the few Sudanese with us were scarcely able to move. When the morning of the sixth day dawned, we made broth with the usual pot of butter, an abundance of water, a pot of condensed milk, and a cupful of flour, for one hundred and thirty people. The chiefs and Bonny were called to a council. At my suggesting a reverse to the foragers of such a nature as to exclude our men from returning with the news of the disaster, they were altogether unable to comprehend such a possibility. They believed it possible that these one hundred and fifty men were searching for food, without which they would not return. They were then asked to consider the supposition that they were five days searching for food, and then had lost the road perhaps, or, having no white leader, had scattered to loot goats, and had entirely forgotten their starving friends and brothers in the camp. What would be the state of the one hundred and thirty people five days hence?'

"Bonny offered to stay with ten men in the camp if I provided ten days' food for each person, while I would set out to search for the men. Food to make a light cupful of gruel for ten men for ten days was not difficult to procure, but the sick and feeble remaining must starve unless I met with good fortune; and accordingly a store of buttermilk, flour, and biscuits was prepared and handed over to the charge of Bonny. In the afternoon of the seventh day we mustered everybody, besides the garrison of the camp, ten men.

"Sadi, a Manyema chief, surrendered fourteen of his men to their doom; Kibbobora, another chief, abandoned his brother; and Fundi, another Manyema chief, left one of his wives and her little boy. We left twenty-six feeble and sick wretches, already past all hope unless food could be brought them within twenty-four hours. In a cheery tone, though my heart was never heavier, I told the forty-three hunger-bitten people that I was going back to hunt for the missing men. We travelled nine miles that afternoon, having passed several dead people on the road; and early on the eighth day of their absence from camp we met them, marching in an easy fashion; but when we were met the pace was altered, so that in twenty-six hours from leaving Starvation Camp we were back with a cheery abundance around us of gruel and porridge, boiling bananas, boiling plantains, roasting meat, and simmering soup. This had been my nearest approach to absolute starvation in all my African experience. Altogether, twenty-one persons succumbed in this dreadful camp.

"On Dec. 17 the Ihuru River was reached in three hours, and, having a presentiment that the garrison of Fort Bodo were still where I left them, the Ihuru was crossed the next day, and for the two following days we steered through the forest regardless of paths. We had the good fortune to strike the western angle of the Fort Bodo plantations on the 20th, and found that my presentiment was true. Lieut. Stairs and the garrison were still at Fort Bodo, fifty-one souls remaining out of fifty-nine.

"Not a word had been heard of Emin or of Jephson during the seven months of my absence. Knowing the latter to be an energetic man, we were left to conjecture what detained Jephson, even if the affairs of his province had detained Emin. On Dec. 23 the united expedition continued the march eastward; and as we had now to work by relays, owing to the fifty extra loads, we did not reach the Ituri Ferry, which was our last camp in the forest region before emerging on grass-land, until Jan. 9. My anxiety about Mr. Jephson and Emin would not permit me to dawdle on the road, making double trips in this manner: so, selecting a rich plantation and a good camping site east of the Ituri River, I left Stairs in command with one hundred and twenty-four people, including Parkes and Nelson, and on Jan. 11 continued my march eastward.

"The people of the plains, fearing a repetition of the fighting of December, 1887, flocked to the camp as we advanced, and formally tendered their submission, agreeing to the contributions and supplies. The blood of brotherhood was made, the exchange of gifts was made, and a firm friendship established. The huts of our camp were constructed by natives, and food, fuel, and water were brought to the expedition as soon as a halting-place was decided on. We heard no news of white men on Lake Albert from the plain people until on the 16th, at a place called Gaviras. Messengers from Kavalli came with a packet of letters, with one letter written on three dates, with several days' interval between, from Jephson, and two notes from Emin, confirming the news in Jephson's letter. You can but imagine the intense surprise I felt while reading the letters by giving you extracts from them in Jephson's own words:—

"'I am writing to tell you the position of affairs in this country, and I trust the letter will be delivered to you at Kavalli in time to warn you to be careful. On Aug. 18 a rebellion broke out here,

and the Pacha and I were made prisoners. The Pacha is a complete prisoner, but I am allowed to go about the station; but my movements are watched. The rebellion has been gotten up by some half-dozen Egyptians (officers and clerks); and gradually others joined, some through inclination, but most through fear. The soldiers, with the exception of those at Labore, have never taken part in it, but have quietly given in to their officers.'

"Jephson continued, 'When the Pacha and I were on our way to Regaf, two men — one an officer, Abdul Voal Effendi, and the other a clerk — went about and told the people they had seen you, and that you were only an adveturer, and had not come from Egypt; that the letters you brought from the Khedive and Nubar were forgeries; that it was untrue Khartum had fallen; and that the Pacha and you had made a plot to take them, their wives, and their children out of the country, and hand them over as slaves to the English. Such words, in an ignorant, fanatical country like this, acted like fire among the people, and the result was a general rebellion, and we were made prisoners. The rebels then collected the officers from the different stations, and held a large meeting here to determine what measures they should take; and all those who did not join the movement were so insulted and abused that they were obliged, for their own safety, to acquiesce in what was done.

"'The Pacha was deposed, and those officers suspected of being friendly to him were removed from their posts, and those friendly to the rebels were put in their place. It was decided to take the Pacha as a prisoner to Regaf, and some of the worst rebels were even in for putting him in irons; but the officers were afraid to put their plans into execution, as the soldiers said they never would permit any one to lay a hand on him. Plans were also made to entrap you when you returned, and strip you of all you had. Things were in this condition when we were startled by the news that the Mahdi's people had arrived at Lado with three steamers and nine sandals and nuggers, and had established themselves on the site of the old station. Omar Sali, their general, sent up three peacock dervishes with a letter to the Pacha, demanding the instant surrender of the country. The rebel officers seized them, and put them into prison, and decided on war. After a few days the Mahdists attacked and captured Regaf, killing five officers and numbers of soldiers, and taking many women and children prisoners; and all the stores and ammunition in the station were lost. The result of this was a general stampede of the people from the stations of Biddon, Kirri, and Muggi, who fled with their women and children to Labore, abandoning almost every thing. At Kirri the ammunition was abandoned, and was seized by natives. The Pacha reckons that the Mahdists number about one thousand five hundred. The officers and a large number of soldiers have returned to Muggi, and intend to make a stand against the Mahdists.

"'Our position here is extremely unpleasant, for since the rebellion all is chaos and confusion. There is no head, and half a dozen conflicting orders are given every day, and no one obeys. The rebel officers are wholly unable to control the soldiers. The Boris have joined the Mahdists. If they come down here with a rush, nothing can save us. The officers are all frightened at what has taken place, and are anxiously awaiting your arrival, and desire to leave the country with you; for they are now really persuaded that Khartum has fallen, and that you have come from the Khedive. We are like rats in a trap. They will neither let us act nor retire; and I fear, unless you come very soon, you will be too late, and our fate will be like that of the rest of the garrisons of the Sudan. Had this rebellion not happened, the Pacha could have kept the Mahdists in check some time, but now he is powerless to act.

"'I would suggest, on your arrival at Kavallis, that you write a letter in Arabic to Shukri Aga, chief of the Mswa Station, telling him of your arrival, and telling him that you wished to see the Pacha and myself. Write also to the Pacha or myself, telling us what number of men you have with you. It would, perhaps, be better to write me, as a letter to him might be confiscated. Neither the Pacha nor myself thinks there is the slightest danger now of any attempt to capture you, for the people are now fully persuaded that you are come from Egypt, and they look to you to get them out of their difficulties. Still it would be well for you to make your camp strong. If we are not able to get out of the country, please remember me to my friends,' etc.

"A postscript, dated Nov. 24, says, 'Shortly after I had written you, the soldiers were led by their officers to attempt to retake Regaf; but the Mahdists defended it, and killed six officers and a large number of soldiers. Among the officers killed were some of the Pacha's worst enemies. The soldiers in all the stations were so panic-stricken and angry at what happened, that they declared they would not attempt to fight unless the Pacha was set at liberty. So the rebel officers were obliged to free him, and sent him to Wadelai, where he is free to do as he pleases; but at present he has not resumed authority in the country. He is, I believe, by no means anxious to do so. We hope in a few days to be at Tunguru Station, on the lake, two days by steamer from Nsabe; and I trust when we hear of your arrival that the Pacha himself will be able to come down with me to see you. We hear that the Mahdists sent steamers down to Khartum for re-enforcements. If so, they cannot be up here for another six weeks. If they come up here with re-enforcements, it will be all up with us; for the soldiers will never stand against them, and it will be a mere walk-over. Every one is anxiously looking for your arrival, for the coming of the Mahdists has completely cowed them. We may just manage to get out if you do not come later than the end of December, but it is entirely impossible to foresee what will happen.'"

"Jephson, in a second postscript, dated Dec. 18, says, 'Mogo, the messenger, not having started, I send a second postscript. We were not at Tunguru on Nov. 25. The Mahdists surrounded Duffie Station, and besieged it for four days. The soldiers, of whom there were about five hundred, managed to repulse them, and they retired to Regaf, their headquarters. They have sent down to Khartum for re-enforcements, and doubtless will attack again when strengthened. In our flight from Wadelai the officers requested me to destroy our boats; and the advances, therefore, broke it up. Duffie is being renovated as fast as possible. The Pacha is unable to move hand or foot, as there is still a very strong party against him, and the officers are no longer in immediate fear of the Mahdists. Do not on any account come down to us at my former camp on the lake near Kavallis Island, but make your camp at Kavallis, on the plateau above. Send a letter directly you arrive there, and as soon as we hear of your arrival we will come to you. I will not disguise facts from you, that you will have a difficult and dangerous work before you in dealing with the Pacha's people. I trust you will arrive before the Mahdists are re-enforced, or your case will be desperate.'"

Stanley answered, "I have read your letter half a dozen times over, but fail to grasp the situation thoroughly, because in some important details one letter contradicts the other. In one you say the Pacha is a close prisoner, while you are allowed a certain amount of liberty; in the other you say you will come to me as soon as you hear of our arrival here, and 'I trust,' you say, 'that the Pacha will be able to accompany me.' Being prisoners, I fail to see how you could leave Tunguru at all. All this is not very clear to us, who are fresh from the bush. If the Pacha can come, send a courier, on your arrival at our old camp on the lake below here, to announce the fact, and I will send a strong detachment to escort him up to the plateau; even to carry him, if he needs it. I feel too exhausted, after my thirteen hundred miles of travel since I parted from you last May, to go down to the lake again. The Pacha must have some pity for me. Don't be alarmed or uneasy on our account. Nothing hostile can approach us within twelve miles without my knowing it. I am in the thickest of a friendly population; and if I sound a war-note, within four hours I can have two thousand warriors to assist me to repel any force disposed to violence; and if it is to be a war, why, then, I am ready for the cunningest Arab alive. I want to help the Pacha somehow, but he must also help me and credit me."

"On Jan. 16 I received with this batch of letters two notes from the Pacha himself, confirming the above, but not a word from either Jephson or the Pacha, indicating the Pacha's purpose. Did he still waver, or was he at last resolved? With any other man than the Pacha or Gordon, one would imagine, that being a prisoner, and a fierce enemy hourly expecting to give the *coup mortal*

he would gladly embrace the first chance to escape from the country. Given up by his government, there was no hint in these letters what course the Pacha would follow. These few hints of mine, however, will throw some light on my postscript, which here follows; and, in my state of mind after reading these letters, I wrote a formal letter which might be read by any person, — Pacha, Jephson, or any of the rebels, — and addressed it to Jephson, as requested; but on a separate sheet of paper I wrote a private postscript for Jephson's persual, as follows: —

Kavallis, January.

My Dear Jephson, — I now send thirty rifles and three Kavallis men down to the lake with my letters, with my urgent instructions that a canoe should be set off and the bearers be rewarded. I may be able to stay longer than six days here, perhaps ten days. I will do my best to prolong my stay until you arrive without rupturing the peace. Should we get out of this trouble, I am his most devoted servant and friend, but if he hesitates again, I shall be plunged in wonder and perplexity. I could save a dozen pachas if they were willing to be saved. I would go on my knees and implore the Pacha to be sensible of his own case. He is wise enough in all things else, even for his own interest. Be kind and good to him for his many virtues, but do not you be drawn into the fatal fascination the Sudan territory seems to have for all Europeans in late years. As they touch its ground, they seem to be drawn into a whirlpool, which sucks them in, and covers them with its waves. The only way to avoid it is to obey blindly, devotedly, and unquestioningly all orders from the outside.

The committee said, "Relieve Emin with this ammunition. If he wishes to come out, the ammunition will enable him to do so. If he elects to stay, it will be of service to him." The Khedive said the same thing, and added, that, if the Pacha and his officers wished to stay, they could do so on their own responsibility. Sir Evelyn Baring said the same thing in clear, decided words; and here I am, after 4,100 miles of travel, with the last instalment of relief. Let him who is authorized to take it, take it and come. I am ready to send him all my strength, and will assist him; but this time there must be no hesitation, but positive yea or nay, and home we go.

Yours sincerely,

Stanley.

In the course of his correspondence Mr. Stanley says, —

"On Feb. 6, Jephson arrived in the afternoon at our camp at Kavallis. I was startled to hear Jephson, in plain undoubting words, say, 'Sentiment is the Pacha's worst enemy. No one keeps Emin back but Emin himself.' This is the summary of what Jephson learned during the nine months from May 25, 1888, to Feb. 6, 1889. I gathered sufficient from Jephson's verbal report to conclude that during nine months neither the Pacha, Casati, nor any man in the province, had arrived nearer any other conclusion than what was told us ten months before. However, the diversion in our favor created by the Mahdists' invasion, and the dreadful slaughter they made of all they met, inspired us with hope that we could get a definite answer at last, though Jephson could only reply, 'I really can't tell you what the Pacha means to do. He says he wishes to go away, but will not move. No one will move. It is impossible to say what any man will do. Perhaps another advance by the Mahdists will send them all pellmell towards you, to be again irresolute and requiring several weeks' rest.'"

Stanley next describes how he had already sent orders to mass the whole of his forces ready for contingencies. He also speaks of the suggestions he made to Emin as to the best means of joining him, insisting upon something definite; otherwise it would be his (Stanley's) duty to destroy the ammunition, and march homeward. He continues, —

"On Feb. 13, a native courier appeared in camp with a letter from Emin, and with the news that he was actually at anchor just below our plateau camp. But this is his formal letter to me, dated the 13th: —

Sir, — In answer to your letter of the 7th instant, I have the honor to inform you that yesterday I arrived here with my two steamers, carrying a first lot of people desirous to leave this country under your escort. As soon as I have arranged for a cover for my people, the steamers have to start for Mswa Station to bring on another lot of people. Awaiting transport with me are some twelve officers anxious to see you, and only forty soldiers. They have come under my orders to request you to give them some time to bring their brothers from Wadelai, and I promised them to do my best to assist them. Things having to some extent now changed, you will be able to make them undergo whatever conditions you see fit to impose upon them. To arrange these, I shall start from here with officers for your camp, after having provided for the camp; and if you send carriers, I could avail myself of some of them. I hope sincerely that the great difficulties you had to undergo, and the great sacrifices made by your expedition on its way to assist us may be rewarded by full success in bringing out my people. The wave of insanity which overran the country has subsided, and of such people as are now coming with me we may be sure. Permit me to express once more my cordial thanks for whatever you have done for us,

Yours,

Emin.

BARNACLES.

Among the curious myths which in the middle ages did duty for natural science, one of the longest-lived, and yet one of the most extraordinary, was that which not only conceived the common shell-fish, the barnacle, to be the fruit of a tree, but went on to allege its transformation into the sea-bird known as the barnacle-goose. The successive changes from fruit to fish and from fish to fowl which the myth involved proved no obstacle to its wide acceptance and long-continued credence. According to an article by S. Heywood Seville, published in a recent number of *Knowledge*, it was widely current before the end of the twelfth century. Giraldus Cambrensis, writing in the reign of Henry II., gives, in his "Topographia Hiberniæ," a detailed account of it. "There are in this place," says he in one passage, "many birds which are called barnacles. Against nature, nature produces them in a most extraordinary way. They are produced from fir timber, tossed along the sea, and are at first like gum. Afterwards they hang down by their beaks as if from a seaweed attached to the timber, surrounded by shells in order to grow more freely. Having thus, in process of time, been clothed with a strong coat of feathers, they either fall into the water or fly freely away into the air. They derive their food and growth from the sap of the weed or the sea by a secret and most wonderful process of alimentation. I have frequently with my own eyes seen more than a thousand of these same bodies of birds hanging down on the seashore from one piece of timber, enclosed in shells and already formed. They do not breed and lay eggs like other birds, nor do they ever hatch any eggs, nor do they seem to build nests in any corner of the earth." After this account, Giraldus proceeds to inveigh against the custom, which prevailed in some parts of Ireland, of eating the barnacle-geese during Lent, — a custom which was justified by those who followed it by the argument that the geese were "not flesh, nor born of flesh," and which affords striking proof of the credence accorded to the story.

Though contradicted from time to time by some of the bolder writers and observers, the fable kept a strong hold on the popular mind, and even the educated were not ashamed to avow their belief in it. Sir John Maundevile alludes to it in his "Travels," where he speaks of the "trees that bear a fruit that becomes flying birds." Sir John somewhat naïvely adds, that the people "towards Upper India," to whom he recounted the story, "had thereof great marvel that some of them thought it was an impossibility." The "Travels" appeared about 1370, and more than two centuries later the subject was treated with considerable fulness, and in the most obvious good faith, by John Gerarde, who, in his "Herbal," published in 1597, devotes to it a chapter entitled "Of the Goose-tree, Barnakle-tree, or the tree bearing Geese," in which, after narrating the current belief as to the barnacle-geese being produced in the north of Scotland from shell-fish growing on trees, he proceeds to pledge his own credit as to the main facts of the story. Clearly, the myth was current in Shakspeare's time; and although, in an edition of the "Herbal" published in 1636, the editor added a note of caution to the reader at the foot of the chapter, yet eighty years after Gerarde wrote, a scientific writer was to be found, who, writing for scientific readers, asserted, of his own knowledge, the existence of the birds within the shells. This was Sir Robert Moray, who describes himself as "lately one of His Majesty's council for the Kingdom of Scotland," and who contributed to the "Philosophical Transactions" of 1677–78 a paper entitled "A Relation Concerning Barnacles," from which the following passages are transacted: "Being in the Island of East, I saw