cells, that will support a man and an engine in a moderate breeze.

It will be interesting to watch the progress made in the next two stages of Dr. Bell's programme, which literally means the conversion of a kite into a flying machine. These stages consist in mounting his structure on a light catamaran form of boat and propelling it on a water surface by means of aërial propellers until it can be steered upwards into the air. Whether this form of starting is as good or as practical as running it on wheels remains to be seen, but at any rate it seems the safest way to commence with (Fig. 4).

It may be mentioned in conclusion that not only is this printed address accompanied by numerous well-reproduced illustrations and a useful bibliography relating to aërial locomotion, but all details concerning one of the large winged-cell structures and the interesting discussion which followed the reading of the address are inserted.

Among those who took a prominent part in this discussion was Mr. Charles M. Manly, who, as he stated, "had the pleasure and the honour of being associated for some seven years with the lamented Secretary Langley as his assistant in direct charge of the experiments which he conducted at the Smithsonian Institution." In his remarks it is good to read that the work initiated by Langley is not abandoned, but merely temporarily suspended. In fact, it seems quite probable that Langley's machine will again be seen flying through the air, for Mr. Manly proposes to re-equip and launch it again. To use his own words :—

"It is my purpose at the earliest moment that I can possibly spare the time for it, to re-equip the aërodrome with proper supporting surfaces, and, using the same launching apparatus, to give the aërodrome a fair trial, this time over land instead of over the water, when I feel very certain that it will fully demonstrate the correctness of its design and construction and crown Mr. Langley's researches with the success which they so richly deserve, and I trust that the day that this will be achieved is very near at hand. It was the launching apparatus, all will remember, which in both of the experiments caused the accidents that prevented any test of the aërodrome itself. These accidents were not due to defects in the design or fundamental construction of the launching apparatus, for the smaller apparatus of exactly the same design had been used more than thirty times for launching the smaller machines, and without a single failure. Certain minute defects in the releasing mechanism were the sole cause of the trouble."

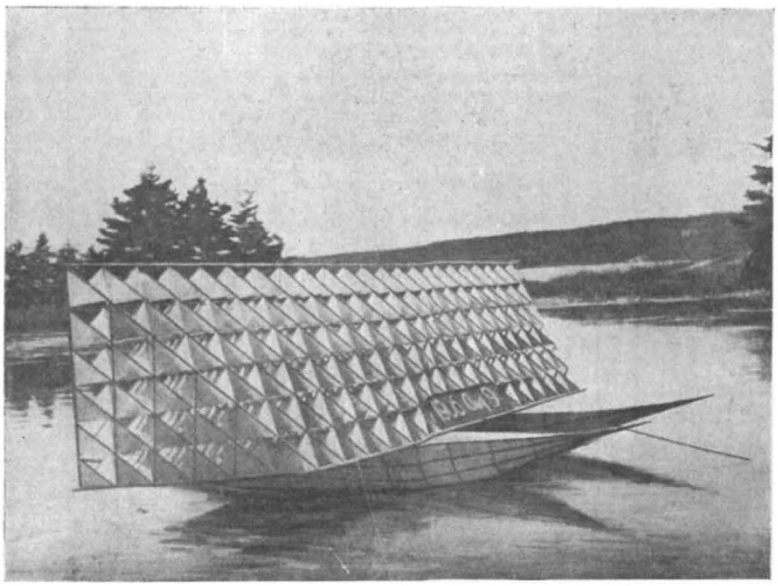

FIG. 4.—A floating kite, adapted to be towed out of the water.

MALTA FEVER.

A LESSON IN PREVENTIVE MEDICINE.

SITUATED in the midst of the Mediterranean, swept by all the winds of heaven, and enjoying brilliant sunshine for several months in the year, the island of Malta should be one of the healthiest of places. Its freedom from swamps or standing water of any kind protects the island from that scourge of warm climates—malaria. For many years past, however, Malta has suffered from the prevalence of a serious local fever, of a most persistent character, which has been the bane of the island, and particularly of the garrison; for a large fraction of the naval and military forces has been constantly incapacitated by this disease. Every year some 650 sailors and soldiers have fallen victims to it, and, as each patient stays on an average 120 days in hospital, this gives a total of about 80,000 days of illness per annum. Moreover, most of these men have to be sent to England to recover their health, and the consequent expense has involved a very considerable loss in money to the Government.

This fever appears to be widely distributed in the world, but is most familiar to us in its incidence around the coasts of the Mediterranean. On the island of Malta it has worked its worst ravages, and hence the name of Malta fever, by which it is best known.

Now, however, all this has been changed by a simple application of the discoveries of science, and widespread gratification will be given by the intelligence, furnished in recently published reports, that since June, 1906, when the new preventive measures were put into practice, Malta fever may be said to have practically disappeared from the garrison of the Island Fortress.

What are these preventive measures, and how has this result been achieved?

The serious ravages of Malta fever made it desirable that a searching investigation should be taken in hand. In 1904 the Royal Society, at the request of the Admiralty, the War Office, and the Colonial Office, undertook to investigate the causes of this fever, and sent out a small commission to Malta for that purpose. This commission, which consisted chiefly of Army and naval medical officers, has been at work for three years, under the supervision of a committee of the Royal Society, and has only lately completed its labours. It is unnecessary to describe the details of the three years' work; it is enough to say that every likely line of research was followed in order to discover how man becomes infected by

this disease. So long ago as 1887 an Army medical officer discovered that Malta fever is caused by the entrance into the body of a minute bacterium, which was named the *Micrococcus melitensis*. This microbe was studied from many points of view, but with no success until a discovery was made which cleared up the mystery. This was the remarkable fact that the goats in Malta are susceptible to this disease, and act, as it were, as a reservoir of the virus. In truth, it is probable that Malta fever is primarily a disease of goats, and that man is infected from the goat, not the goat from man. The goat is very much in evidence in Malta, there being some 20,000 of them, which supply practically all the milk used in the island. It was discovered by the commission that half these animals are affected by Malta fever, and that one-tenth are constantly passing the *Micrococcus melitensis* in their milk. Notwithstanding that the goats show no outer signs of the disease, they continue, possibly for years, to secrete milk containing the poison.

It seemed evident, then, that to banish Malta fever from our sailors and soldiers on the station, all that was required was to eliminate goats' milk from their dietary. This step was taken in June, 1906, with the striking result that the cases of fever fell to one-tenth of what had been their normal number. There is, therefore, reasonable hope that this disease will now disappear from the garrison in Malta, and some 80,000 days of illness be blotted out from the yearly records of the Navy and Army.

If these good results are maintained, this investigation will stand out as one of the most notable examples of successful work in the prevention of disease, and will clearly show the economy of spending a few thousands on a thorough scientific investigation.

The research occupied some time, and from first to last employed some twelve men, but the outlay in time and money are as nothing to the result achieved.

INTERNATIONAL ASSOCIATION OF ACADEMIES.

YESTERDAY morning, May 29, there opened at Vienna the third triennial general assembly of the International Association of Academies, of which the Imperial Academy of Sciences, Vienna, has been the directing academy for the last three years.

Great Britain is represented in this association by the Royal Society of London in the section of natural science, and by the British Academy for Historical and Philological Studies in the section of letters.

The delegates appointed to attend the assembly on behalf of the Royal Society are Sir George Darwin, K.C.B., Sir Norman Lockyer, K.C.B., Lieut.-Colonel Prain, Prof. Schuster, Dr. W. N. Shaw, Prof. C. S. Sherrington, Prof. H. H. Turner, and Dr. A. D. Waller, Prof. Schuster being the delegate charged to deliver the vote of the society; while the British Academy is represented by Prof. Bywater and Prof. Israel Gollancz.

A number of subjects of general scientific importance will be discussed at the meeting, as well as certain questions of internal policy concerning the status of the association, and its mode of working under its statutes.

The Royal Society has put forward two proposals for the consideration of the assembly. One is for the establishment of a uniform lunar nomenclature and a proposition will be submitted by the council of the association for the appointment of a committee to work out a scheme in furtherance of this object. In this connection the Royal Society propounds suggestions regarding the coordination of lunar nomenclature, which will no doubt form a basis for discussion.

Another proposal of the Royal Society for the co-operation of the International Association in the International Union for Solar Research will probably lead to considerable discussion, not on account of want of sympathy with the movement, but because of questions which have been raised as to the constitutional power of the association to join another organisation.

An important proposal of the Académie des Sciences to create an organisation of meteorological stations at different points on the earth's surface, at the expense of the Governments respectively concerned, will be put forward with the support of the council of the association.

The assembly will also be recommended to approve the resolutions of the committee which met at Frankfurt-am-Main in 1904, proposing changes in the statutes of the International Seismological Association, which have since been adopted. That committee recommends the associated academies to endeavour to induce their Governments to cooperate with the International Seismological Association in dealing with seismic problems of physical interest.

Other matters to be brought before the assembly in the science section are a report of the committee for investigating the anatomy of the brain; reports upon geodetic measurements; a report of the commission appointed in 1904 for the investigation of atmospheric electricity; the consideration of the further working of the committee appointed in 1904 for the magnetic measure of a circle of latitude.

In the section of letters there will be reports presented upon the edition of the works of Leibnitz, initiated by the association; upon the international loan of manuscripts; upon the edition of the Mahabharata; the publication of an Encyclopædia of Islam; the Corpus of Greek records and the Corpus medicorum antiquorum.

THE SMALL PLANETS.[1]

M. MASCART'S summary of his own work is as follows:—

Nous avons voulu montrer l'ampleur de la question des petites planètes, qui ne fut jamais encore exposée dans son ensemble, et si nous avons suscité bien plus de points d'interrogation que nous n'en avons levés, nous serons du moins heureux, peut-être, d'appeler l'attention des astronomes sur quelques problèmes assez mystérieux.

Probably an author has seldom given in few words so excellent and accurate a description of his work. M. Mascart has collected on a large scale, and has thus performed a great service to this branch of astronomy. We may turn to his bibliography containing more than a hundred names with a reasonable confidence that nothing of importance has been omitted.

The subject of the small planets appears to bristle with striking statistical peculiarities. To exhibit their nature we note down a few, and may remark that perhaps in no case whatever has a completely satisfactory explanation been given.

(1) If the small planets be arranged in order of mean distance, or of mean motion, there are marked gaps in the series, first noticed by Kirkwood, corresponding to mean motions twice and three times that of Jupiter.

(2) When the inclination to the ecliptic is large, so also, in general, is the eccentricity, and *vice versâ*.

[1] "La Question des petites Planètes." By M. J. Mascart. Pp. 110.