

## Memo. No. 17.

The object of Mr. Karts communication is to induce the Government of H. M. Majesty to cooperate with the administration of which he is the chief in collecting such information as may be of use to scientific men in making what has been termed by Vicent Maury, of the U. S. Navy, "The Geography of the Sea", a subject upon which his latter office has been the first to write a book, which has become justly celebrated throughout the world, and has been translated into all languages; and also in establishing meteorological stations at different points in the Arctic Sea for transmitting intelligence of storms that may be prevailing at any place, and which vessels, about to sail from a port where there is every appearance of good weather, may avoid by remaining a short time longer at anchor.

The first part of this scheme could not be carried out simply by establishing shore stations for the observation of storms or signs of storms or other meteorological



logical phenomena as can be observed from the coast, many such observations having to be collected at sea by masters of vessels, and in the interior of the country. But besides their immediate practical utility, these observations would greatly contribute towards increasing the stock of meteorological knowledge which every nation that has any interest in shipping is so anxious to possess; and if it were for the merits which Mr. Hart's scheme offers in this respect alone, it would deserve all the consideration of A. S. U. Government.

In America, a service, composed of army officers and non-commissioned officers, has been organized for the purpose of taking meteorological observations within the limits of the United States and on its coasts - the series of observations to be taken at sea having been left to the officers of both the naval and the mercantile marine, who transmit them to a bureau at Washington, called the "Hydrographic Bureau", where they are duly compared by competent persons, and scientific deductions derived from them. The good results experienced in that country by the timely conveyance of news

news of this sort, whereby many wrecks and marine disasters have been averted, have been considerable.

In furtherance of his scheme, Mr. Hart proposes:-

That a series of meteorological stations from Pasietta to Hong Kong, with intermediate stations at Yokohama, Nagasaki, Shanghai, and Amoy, be established, the first in China, at Shanghai and Amoy, where there are telegraph offices, the second in Japan, at Yokohama and Nagasaki, the third in Russian Siberia at Pasietta, and the fourth in the English Colony of Hong Kong; and he asks the cooperation of Japan in establishing these stations, leaving it to her to defray all the expenses of those at Yokohama and Nagasaki, excepting that of purchasing meteorological instruments which he proposes should be sustained by the administration of which he is the chief.

Therefore, the expenses to be incurred by the Japanese Government in aiding the carrying out of his scheme would be first, that of furnishing rooms in a suitable building where such observations could be registered, which would be inconsiderable,



as two small rooms in each of the light-houses erected at the entrance to the ports of Godohama and Tangasaki, is all that would be required for the purpose.

Second, that of organizing a staff of five persons, as will be explained hereunder, for each station, to take observations. These might well be selected from among the midshipmen of the Ueda Naval Academy who have passed their examinations, and non-commissioned officers of the Navy, as the collecting of such observations as would be necessary, does not require any great scientific knowledge, and these young men would know all that would be requisite, and probably a great deal more. Besides, the end in view being one that especially interests naval men, it would be advisable to use naval men in attaining it. For this purpose, these young officers and non-commissioned officers might be detailed to serve in the observatories for one year, after which they might return to their more practical observations. The time spent by them in the fulfilment of this special duty would not be lost, as it would afford them the means of perfecting themselves in a branch of their profession in which, when

when at sea, it is of the utmost importance that they should be proficient. Being persons whom the Government has to pay in any case, it may be said that their salary, as regards their connection with this scheme, would be nothing.

Third. The cost of sending daily and periodical telegrams containing information concerning the general state of the weather, the different phases of prevailing storms, etc., from the two Japanese stations to Shanghai, Hong Kong, or Amoy, or to all of them at once, as the case may be. But, as the daily information forwarded by telegraph would be very short, and the periodical would only be sent when signs of coming storms are detected, or when storms are prevailing, neither of which events, very fortunately, happen every day, the expenses so incurred would not be considerable. All other barometrical, hygrometrical, and thermometrical observations, or those made with other instruments than the barometer, hygrometer and thermometer, such as those used in observing the daily direction of the winds and the clouds, the force and velocity of the winds, etc., which would be sent to



to Shanghai for scientific reference, might be forwarded by mail at such intervals of time as may hereafter be determined.

Similar information to the above, of much practical value to Japanese Commerce, would, in turn, be sent at the expense of the Chinese Government from Shanghai, Hong Kong where Mr. Hart has an agent, and Amoy to the stations in Japan. In China, the funds to be applied to the payment of such expenses are derived from duties collected from foreign vessels entering the Chinese treaty ports; and I think it would be well to secure the consent of foreign powers to a similar duty being levied on foreign vessels entering the treaty ports of Japan, the proceeds of which might not only be made use of in collecting and transmitting meteorological news, but also in defraying the expense of lighting and buoying the coasts. In the meantime, it is quite probable that reciprocal arrangements could be made between the Japanese Government and the Danish Telegraph Company in Shanghai, for the free transmission of all such news.

Fourth Postage, stationery, and other incidental expenses would have to be provided for.

In

In paragraph 5 of Circular Despatch No. 70, submitted, Mr. Hart expresses the hope that, in case his scheme should be approved of, the name of the officer charged with the task of carrying out the work both at Yokohama and Nagasaki, will be communicated to him in order that he may supply him with instruments and registers, and with such memoranda as will secure uniformity and scientific precision at all the stations. This portion of Mr. Hart's proposal could not be acceded to; for, if it were, the Japanese officers stationed at these ports would virtually be placed under his orders and control, which cannot be. I would advise the Department to so inform Mr. Hart, in reply, and say to him that, when his plan had been approved by the Imperial Government, he will, for the sake of securing that uniformity which he so justly desires to obtain, be welcome to send the registers, instruments, and instructions he refers to, to the Department under which the Japanese officers entrusted with the management of this scheme, will operate; that this Department will then forward the same to its subordinates,

and



and will see that Mr. Hart's requests are properly complied with; and that, as regards all matters of office detail which should be attended to without delays, by the officers taking observations at each station, in their telegraphic or postal consultations with other officers operating in the same manner in China, they can be settled between these officers in their direct correspondence with each other.

The staff of observation at each station would be composed of two midshipmen and three non-Commissioned Officers. The midshipmen at each station might, in turn, be directed to record the results of the observations taken by the non-Commissioned officers under their supervision; and, whenever advisable, send them to the telegraph offices for immediate transmission to other stations, both in China and Japan; and they would also forward them to the Department of the Navy at Yedo, where they would be carefully classified for publication at Shanghai by the Central Office, which Mr. Hart proposes to establish here at the expense of the Chinese Government.

The instruments which Mr. Hart may send are, 1<sup>st</sup>, a manometer, to indicate the  
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force and velocity of the wind; 2<sup>nd</sup>, a Drosometer, to measure the quantity of dew that gathers on the surface of a body which has been exposed to the open air during the night; 3<sup>rd</sup>, an Acthiroscope, to measure the frigorific impressions which are showered incessantly from a distant sky; 4<sup>th</sup>, a Photometer, which, being placed in the open air, exhibits distinctly the progress of illumination from early dawn to the full vigor of noon, and then its gradual decline till Evening has spread her mantle over the earth; 5<sup>th</sup>, a hygrometer, to ascertain the quantity of moisture held in the air; 6<sup>th</sup>, an Anemometer, to measure the quantity of moisture exhaled from a humid surface in a given time; and 7<sup>th</sup>, a self-registering barometer and thermometer, and other barometers and thermometers, the use and object of which are well known.

The scheme, as above explained, refers only to what concerns Japan, China and Hong Kong. As regards its extension to Pasietta, Manila, Bangkok, Saigon, Singapore and Batavia, it would be well to discuss the matter with Mr. Hart, through the Japanese representative at Peking, who  
could



could gather from his colleagues all the information that His Excellency, Tanomi Soyeshima, the Secretary for Foreign Affairs, requires to have before concluding the necessary arrangements with the various powers interested in the scheme, viz. - Russia, Siam, Holland, France, England and Spain; and it would be well to so inform Mr. Hart in the private letter sent to him in reply to his note.

Respectfully Submitted

Gaimusho, 13<sup>th</sup> October, 1873.

To  
His Excellency,  
Tanomi Soyeshima,  
Minister of Foreign Affairs.



Memo. No. 17.

October 12<sup>th</sup>, 1873.

天氣日報一件

李氏第拾七号覽書