fathom. Geodetical measurement makes this fathom a little more than 6 ft.,—6·08, say 6 ft. and 1 inch over. Longitude he measures on his chronometer, giving sexagesimal time of 24 hours (h.) in the day, an hour of 60 minutes (m.); and a minute of 60 seconds (s.); four seconds of longitude=one minute of longitude at the equator, or a mile, an easy range of eyesight. The schoolmaster cuts the fathom down to 6 ft. exactly, and would sweep it away as a useless load on the schoolboy's memory, although universal in sounding, as in

"Full fathom five thy father lies."

The schoolmaster has his eye, too, on the suppression of all the ancient measures of agriculture,—furlong, rod, pole, perch, rood, chain, ell, palm, hand. But the chain as the length of the pitch at cricket is too sacred to be assailed. And what is the height in C.G.S. centimetres of a horse's hands high? He is obliged to cling to the mile, the statute, land, military mile, of 8 furlongs, 80 chains, or 1760 yards.

It is unfortunate the sailor carried the world mile on to his own unit, perhaps under a mistaken idea that

the two miles were undistinguishable. Newton was arrested in his speculation on gravity by falling into this error. The land soldier mile is the one entitled to its name as the length of 1000 paces (*passus*, not *gradus*), *millia passum*, M.P. on the Roman milestone, covered in marching along the road, making 5·28 ft. the double pace of the Roman soldier; this is cut down to 5 ft. in our modern drill book, and less still in the metric equivalent of the French soldier.

It is strange to read to-day in the "Admiralty Manual of Navigation," 1914, page 1, the earth is described as an oblate spheroid, greatest and least diameter 3963, 3950 miles (military, soldier, statute). In navigation the surface of the ocean is always treated as a perfect sphere, and of girth $360 \times 60 = 21600$ sea miles (S), making the radius of the sphere 3438 S miles, the length of the radian along a meridian. Besides the solecism of mentioning the military land mile as a measure in navigation, the real dimensions of the earth are double as stated in the Manual. Can we wonder then at an Admiral sending himself and his flagship to the bottom by a confusion between radius and diameter?

The Royal Society.

MUNIFICENT GIFT FROM SIR ALFRED YARROW.

THE generous gift from Sir Alfred Yarrow, announced in the subjoined letter from him to the president of the Royal Society, and gratefully accepted by the Society, is a most welcome acknowledgment from a great leader of industry of the practical service of scientific investigation. Sir Alfred, who was elected a fellow of the Society last year, has always taken an active interest in the progress of science and has promoted its application to industry in many ways—directly in his own works and indirectly by gifts to educational and scientific institutions. His faith in science as the maker of the modern world is unbounded, and the words in which he gives expression to it should afford scientific workers both pride and encouragement. We are at the beginning of a new era of human history, and it is to the close association of science and industry, in the spirit of Sir Alfred Yarrow's letter, that we must look for strength to meet the difficulties before us. The Royal Society, and the scientific workers it represents, may be trusted to continue to extend the boundaries of natural knowledge, and if statesmen and industrialists have the same progressive aims we can look with confidence to whatever the future may bring.

I would ask you to be so kind as to bring before the Council, at an early opportunity, the following proposals:

I have, for many years, held the view that the prosperity of this country has been greatly hampered in the past for the want of better promotion to scientific investigation and its application to practical affairs.

I am convinced that the future prosperity of this country will be largely dependent upon the encouragement of original scientific research. The birth of new industries, and the development of existing ones, are due largely to the growth of science, thus securing

employment and the welfare of the whole community being advanced.

It is doubtful whether even yet it has been realised how completely this country would have been at the mercy of our antagonists in the late war, had it not been for the research work done by our scientific men before the war and during its course.

I desire to mark my sense of the value of research to the community by offering, as a gift to the Royal Society, 100,000*l.* to be used as capital or income for the purposes of the Society, as the Council may think fit, because I recognise conditions alter so materially from time to time that, in order to secure the greatest possible benefit from such a fund, it must be administered with unfettered discretion by the best people from time to time available.

Care must, of course, be taken that a gift from the fund shall in no case lessen any Government grant.

In accordance with your practice you would, I assume, appoint a Committee to administer the fund, and would also frame rules for the guidance of the Committee, while reserving the right to alter such rules from time to time; and I would suggest that they be reconsidered by the Council every tenth year so as to meet modern needs.

I should prefer that the money be used to aid scientific workers by adequate payment, and by the supply of apparatus or other facilities, rather than to erect costly buildings, because large sums of money are sometimes spent on buildings without adequate endowment, and the investigators are embarrassed by financial anxieties.

Although I thus give a general expression of my wishes, I do not intend, by so doing, to create any Trust or legal obligation for their fulfilment.

In conclusion, I should like to record my firm conviction that a patriotic citizen cannot give money, or leave it at his death, to better advantage than towards the development of science, upon which the industrial success of the country so largely depends.

A. F. YARROW.