by command of His Majesty, February, 1901. These reports contain authoritative statements of great interest upon (I) the ease or difficulty with which the system was adopted: (2) the satisfaction attending its adoption, and (3) the commercial effect attending its adoption, and contain full and convincing testimony in refutation of the statements made by the critic referred to. Of Austria the report says: "The system has now been in compulsory use for twenty-four years, and may be said to give complete satisfaction. Not the smallest desire is evinced in any quarter to revert to the old and more cumbersome method." Of Belgium: "It may be safely stated that if an effort were made to return to the old weights and measures, the attempt would meet with more resistance and encounter greater difficulties than it was ever necessary to overcome in order to establish the system now in force." In Switzerland: "The Federal Government state that they can confidently affirm that the metric system has in every respect proved satisfactory." "All over the Netherlands at the present time no other system than the metric system of weights and measures is in use; the old weights and measures which have been abolished have everywhere disappeared" "The introduction of the metric system into Norway has been hailed by the commercial classes with much satisfaction." These are a few examples of the abundant evidence which can be cited to show the error of Mr. Halsey's statement that "there is not the slightest pretext that it is in common use in trade and commerce."

The claim that the laws in the countries which have adopted the metric system are not enforced so that all other units are excluded, scarcely needs a reply, for few, indeed, have been the laws which have not been broken. It is noteworthy, however, that it is only in those countries where the general intelligence is low that any particular difficulty has been encountered in the enforcement of the law. The consensus of opinion in those countries where the system is compulsory is one of complete satisfaction, and this is emphasized by the fact that nowhere is there any desire to return to the old system. Monsieur Chalon, an eminent French engineer, has "repudiated forcibly the objection made by Americans to the adoption of the metric system, based upon the pretended persistance of the old measures in France. He remarked that this objection, which had made a great impression in the United States, and which the enemies of the metric system had spread abroad through the medium of the press, was untrue, and even ridiculous. He demonstrated by numerous examples that the old names which persist in France, were not the old measures; they were simply popular expressions, habitually used to express certain metric and decimal divisions." (Minutes of the Proceedings of the Société des Ingenieurs Civils de France, May 1, 1903.) With the younger generations the old names fall more and more into disuse.

Mr. Halsey says: "Nowhere has the system been adopted by any people except under compulsion." One might infer from this that legislatures the world over, unmindful of the good of their countries, had forced some pernicious law upon the people. Legislation would be meaningless if the power of enforcement were lacking, and whatever compulsion there is in the law has been placed there voluntarily by the people. The Constitution of the United States is a list of the powers which the people ceded to the National Government. Among these is expressly included the duty "to fix the standard of weights and measures." That arbitrary individual initiative has but little place in matters of such general concern as weights and measures has long been recognized by intelligent classes in all countries. It is only by governmental action that a uniform system applicable to a whole nation can be secured. But let it be noted that not until the common people had secured adequate representation in the National Assembly did France secure a uniform system of weights and measures, and the first step taken was to refer the formulation of such a system to a corps of scientific men and practical engineers, whose proposals, made after the most careful deliberation, were enthusiastically accepted. If this was "compulsion," it was of the same order as the compulsion which is at the base of every act ever enacted by a free people. The previous

confusion in weights and measures had shown the folly of allowing each little district to set up its own arbitrary or local standards.

The time for ridiculing the metric system has long passed by, but what a perversion of logic it is to say that the metric system has received a "staggering blow" because a people demand its use in places where up to this time it has not been compulsory! On the contrary, a demand for more stringent legislation emphatically stamps the metric system with approval. The metric system has been repeatedly endorsed by congresses of textile manufacturers in Europe, including the International Congress for the Unification of the Numbering of Yarns at Paris in 1901, at which sixteen leading nations of the world, including the United States and Great Britain, were officially represented. The Yarn Tables, issued by McLennan, Blair & Co., large yarn merchants of Glasgow, states that "The metric system of weights and measures is so near perfect, and has been adopted so widely that it forms the most suitable basis for a uniform system of counts of yarns." The secretary of the National Association of Wool Manufacturers, now Director of the Census, in his last annual report emphatically urges the adoption of the metric system, stating that "it would seem to be the duty of all intelligent manufacturers to urge and encourage that legislation." The Lowell Textile School, which is in close touch with the textile industry of New England, has adopted the metric system by direct vote of its trustees, two-thirds of whom are active textile manufacturers.

Neither can Mr. Halsey gain anything by belittling the scientific men for championing the metric system. It is absolutely incorrect to say that "scientific men are measurers, not makers." Did not James Watt, a scientific man, construct the model of the first successful steam engine? It might be added that Watt also advocated an international decimal system of weights and measures involving the very principles which ten years later were actually embodied in the metric system. Did not Michael Faraday, one of the greatest scientists of England, actually construct the model which resulted in the electric motor? Did not Professor Henry, another scientific man, actually construct the working model of the electric dynamo? The thousands of successful engineers whom our schools of science have taught how to apply the best scientific methods to practical work will resent the statement of Mr. Halsey.

Lord Kelvin, who designed and constructed the mirror galvanometer, which made the Atlantic cable a success for the first time, who has designed the practical details of scores of practical measuring instruments, and who is a scientist certainly well qualified to render an opinion upon this subject, has said: "I do not think we could do better practically than take the French metrical system as it is; and it is admirably convenient just as we have it now. No change has been suggested that would better it."

From Mr. Halsey's point of view "the crux of the whole matter" centres in the effect upon the machine shop. This is, of course, an important consideration; but the permanent advantages of the metric system have been shown here as elsewhere to be worth whatever temporary inconvenience might be occasioned by the change. There are several large shops in the United States in which the metric system is now being used with perfect satisfaction. The adoption of a standard screw thread is entirely apart from the general question, although it has long been the aim of the antimetric conservatives to concentrate their fire upon this irrelevant subject in order to divert attention from the real issue. But this is a matter, as is frequently the case in treaties made between countries, which can be left to subsequent diplomacy while the major benefits are immediately secured. The preponderating Anglo-Saxon influence in the machine tool industry has until now delayed somewhat the change in this matter, even in countries which are otherwise on a metric basis. The action of the German engineers last July to which Mr. Halsey refers, though but a half-way measure, is significant as an effort to get on to a metric basis. It remains to be seen in how far the new thread is adopted, for there is nothing "compulsory" about it. The