have learned the metric system. They need no weights but the gram with its decimal multiples and divisions. The ounce ought long ago to have been abolished or defined as a definite fraction of the avoirdupois pound alone. Its abolition is much preferable to its retention.

An obvious advantage of dividing the foot into 10 inches is that a cubic foot becomes 1,000 instead of 1,728 cubic inches. The weight of the cubic foot of water becomes 31.25 pounds according to the suggested definition of the pound. The reduction in length to 10 inches, furthermore, makes it coincide very closely with the length of the average masculine foot, while 12 inches is more than twenty per cent. too long.

The suggested length of the inch is between one per cent. and two per cent. less than that of the present inch. Small as this change may be, it constitutes the most serious of all the changes suggested. The practical standard of length in the United States has been, not the yard or foot, but the inch. In the construction and use of all machinery inches and fractions of an inch are the units of measurement. If a screw-thread has been cut in accordance with a gauge based on the inch, a change of two per cent. in the inch would render such a screw worthless for the same machine. The mechanical engineers and machine manufacturers will, therefore, continue to be the most determined enemies of metric reform. Should legislation be adopted involving a change of standards, a generous allowance of time ought to be provided, within which the machinists may adapt new instruments to the new standards. Few, if any, machines can be expected to continue available more than ten years. Such a period of grace would, perhaps, be as much as could be reasonably demanded.

The pound equal to half a kilogram is about one tenth greater than the avoirdupois pound. It is identical with the German *pfund* and the French *livre*. Its adoption by England and the United States would make the pound a definite unit readily understood throughout most of the civilized world. It is now indefinite.

Assigning the qualifier 'metric' to the proposed units to distinguish them from the old ones now in use in the United States, their mutual relations are approximately shown in the following table:

1	metric yard	= 1.0936	old yard.
1	" foot	= 0.8202	" foot.
1	" inch	= 0.9842	" inch.
1	" pound	= 1.1023	" pound.
1	" ton	= 0.9845	" long ton.
1	" quart	= 1.0567	" wine quart.
1	" pint	= 1.0567	" wine pint.
1	" gallon	= 1.0567	" wine gallon.
1	" peck	= 0.9081	" peck.
1	" bushel	= 0.9081	" bushel.

It is, of course, understood that the proposer of any change whatever in the units to which the American public is accustomed will be adversely criticized, particularly by the mechanical engineers and the manufacturers of machine tools. Such criticism can be borne with equanimity if the compromise scheme just outlined should lead to the practical adoption of the metric standards and the decimal system of weights and measures, with a reasonable combination of the binary system with it. The decimal system of coinage a century ago was regarded by some critics as visionary, but it has stood the test of time.

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THE AUSTRALASIAN ASSOCIATION.

The biennial meeting of the Australasian Association for the Advancement of Science was held this year at Dunedin, New Zealand. There was a large attendance of members from all the Australasian colonies

and the efforts of the general secretary, Mr. G. M. Thomson and his committee resulted in a highly successful gathering. The arrangements were satisfactory to the visitors, who were well entertained by the resident members and other citizens.

The generous action of the New Zealand government in granting free railway passes to all visiting members was probably in part responsible for the large attendance.

The address of the president, Professor T. W. Edgeworth David, was delivered on Wednesday, January 6, and the meeting was not concluded until January 13. In his address the president reviewed before a large audience the general advance of all branches of science in southern lands. He strongly encouraged those who are at present engaged in scientific work to redouble their efforts and pleaded that the minds of the young might be so trained in the colonial schools that they may be capable and eager to take up research work in their turn.

On the following day the members were divided into the following sections: A, Astronomy, Mathematics and Physics; B, Chemistry; C, Geology; D, Biology; E, Geography; F, Anthropology; G1, Social Science; G2, Agriculture; H, Architecture and Mining; I, Sanitary Science; J, Mental Science and Education.

The president's address in Section A was an able summary of some recent advances in the theory of the ionization of gases. Professor Brogy, of Adelaide, dealt with his subject in such a manner as to keep his large audience thoroughly interested throughout. On the following day an interesting discussion took place on tidal observation and it was pointed out that New Zealand occupied a very favorable position for such observations. Many other papers were contributed, including one from Professor Rutherford, of Montreal, on the heating effect of radium emanations.

In Section B the president, Mr. Henderson, gave an address on 'Chemistry and Food,' dealing particularly with the adulteration most frequently found in ordinary food substances. Amongst the papers was an interesting research on the acids contained in the resins of some of the New Zealand coniferæ by Professor Easterfield.

Mr. Twelvetrees in his presidential address to Section C dealt with 'Some Aspects of Modern Petrology.' The present confused state of petrological classification was particularly discussed and the president stated that though all systems hitherto proposed had glaring defects he could not believe that the new classification lately proposed in America would be the one finally adopted. Mr. Andrews described some of the glacial features of southern New Zealand, dealing with them in the manner so ably initiated by Professor Davis. Dr. Marshall read a paper on some of the highly interesting alkaline rocks near Dunedin. Some committees' reports were read on 'Glacial Phenomena in Australasia' and important structural features in Australasia and on the possibility of a uniform system of nomenclature in petrology. In the last there were as many divergent views as members.

In Section D the president dealt with the avifauna of Australasia, Polynesia and Austro-Malaya. Amongst many interesting papers were Dr. Chilton's on 'Subterranean Crustacea of New Zealand'; Dr. Fulton's on the habits of the long-tailed cuckoo and Mr. Steads's studies of New Zealand bird life. The nesting habits of these were dealt with in many beautiful photographs.

Anthropology in Section E opened with an address by Professor Baldwin Spencer on 'Totemism in the Central Australasian Tribes.' This was listened to with marked attention even by members who were not otherwise specially interested in anthro-

pology. Other papers were read on Maori folk-lore and studies on various southern languages.

'The Influence of the Southern Ocean on Australasian Climates' was the presidential address of Professor Gregory in the geography section. The effect of oceanic circulation upon weather conditions and the occurrence of weather cycles were the two points most strongly insisted on. Mr. Bowen gave a highly interesting account of the work of the *Discovery* in the South Seas, illustrating his remarks by lantern slides prepared from photographs taken by the expedition.

Agriculture in Section G2 dealt with highly practical matters. The president, Mr. Cato, chose for his subject 'Pomology.' Mr. Gilruth read an important paper on 'The Effect of Injection of Non-pathogenic Cultures with Virulent Ones of Anthrax.' He showed that the anthrax was under certain conditions rendered quite innocuous by this means.

In the architectural section the president, Mr. Deane, dealt with 'Day Laborers on Government Works.' This attracted much attention because of the many instances of colonial governments doing their own contracting.

In the sanitary science section Dr. Tidswell, in dealing with the hygienic action of boric acid, spoke strongly of the deleterious effect that this acid has even when used in small quantities as a preservative of dairy produce.

The education section was the best attended and a larger number of papers was presented to it than to any other section. The discussions evoked in many cases were animated. The president dealt with elementary education in Queensland, and there were papers on the teaching of modern languages, mathematics, geography, etc., and the discussions will probably do much towards the adoption of modern educational methods in Australasia.

Besides the formal meetings of members the association had provided numerous excursions to the many points of scenic or scientific interest in the neighborhood of Dunedin. The botanists were much interested in the abundance of the endemic New Zealand flora still to be found near the town. The geologists viewed and collected from the outcrops of the rare and peculiar alkaline rocks that occur in the Otago Peninsula in such profusion.

Several of the leading citizens of the town entertained the visitors by drives into the country and at afternoon parties at their residences and enabled the workers in various branches of science to meet in social intercourse.

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SCIENTIFIC BOOKS.

Aboriginal American Basketry: Studies in a Textile Art Without Machinery. By Otis Tufton Mason. From the Report of the U. S. National Museum for 1902, pp. 171–548, with 248 plates. Washington, 1904.

A number of influences have been operating for ten years or more to arouse an interest, both scientific and popular, in the basketry of the American Indians. Our museums have sent their representatives far and wide in the search for types, and the competition of private collectors has resulted in a species of basket hysteria which shows no particular signs of abating. This interest, however aroused, is widespread and real and has at last found fitting expression in the sumptuous memoir on the subject which has just appeared from the pen of Otis T. Mason. Professor Mason has long ranked as the leading American authority on primitive industries and technique and there was no one so well equipped as he to undertake the task of collecting and reviewing the results of the scattered studies which have recently been accumulating at a rapid rate. He has acquitted himself admirably.