

Germany, for instance, the people who were too old to learn anything new, and the conservatives who saw no good in anything that did not originate in Germany, clamored against the introduction of the metric system. The literature of that day is full of pathetic pleas. We cannot change. The change is bad. We will not change. The change cannot be made. Nevertheless the change was made with very little trouble, and now no reasonable Germans ever use an old German unit except in sport.

Mr. Halsey would have us believe that Europe is in a state of seething insurrection against a compulsory adoption of the metric system. The writer has lived for a number of years in various countries of Europe, and has never seen or heard of any units used or suggested, outside of England, except metric units.

The American Chamber of Commerce in Paris recently asked the Society of Civil Engineers of France whether the old French units such as arpent, once, aune and boisseau, were still used. The society replied that they are not so used, and cited their use in phrases which are mere meaningless old sayings as vestiges of past use.

In America to-day the "shilling" is still occasionally spoken of. In Philadelphia there are still a few rents that are paid in Spanish dollars. Possibly the cloth-yard, the ell, the league and the cubit may be yet in existence. These were all in national use at one time. Does anyone hesitate on this account to say that America has a decimal coinage and no longer uses the cubit or the league.

The argument that if we were to adopt the metric system at a given date thereafter our inch machines would be useless is another fallacy that history has overthrown. It was used in all the European countries before they changed to the metric system. The German manufacturers declared that as soon as the metric system was adopted their tools would be rendered useless, because they were constructed to give German inches. There was no such trouble. The same tools were used after the system for years, making sizes that were not even metric sizes, employing odd decimals. But every machine uses decimal sizes when working to its ultimate degree of accuracy. There is no such thing, in practice, as an inch pipe. It is always a small decimal over or below an inch. So that whether the decimals are of an inch, or of a centimetre, is of little consequence. In the course of years it would, however, probably be convenient to build machines that turned out approximate even metric sizes.

The attitude of Canadian business men towards the metric system is shown in the resolutions adopted by the fifth Congress of the British Empire, held in August last at Montreal. At this congress there were business men, not scientists, representatives from Chambers of Commerce of the various British colonies, and a very strong resolution was passed by the Congress in favor of a general adoption of the metric system in the Empire by a large majority. The Canadian Manufacturers' Association, composed of manufacturers representing every industry in Canada, has declared more than once in favor of it, as has the Retail Merchants' Association.

The progressive colony of New Zealand has within the last few months passed a Weights and Measures Act, which contains a clause rendering it lawful for the

Governor at any time by proclamation to declare that from and after the date named in the proclamation, being not sooner than the first day of January, 1906, "the metric system shall be the only system of weights and measures recognized for use in New Zealand; and thereafter it shall not be lawful to use any weights and measures other than those."



#### INDEPENDENT TELEPHONY IN CANADA.

The year 1904 promises an active development of telephone competition in Canada. Several of the larger cities of Ontario will have before them at an early date applications for franchises to compete with the Bell Telephone Co. Judging from the widespread dissatisfaction prevailing against the rates and service of the existing monopoly, the advent of competition will be welcomed by the majority of telephone users, and also by very many who are debarred by the prevailing rates from participating in the benefit of telephone facilities. Doubtless, a great effort will be made by the existing companies to persuade city councillors that the telephone is a natural monopoly, and that competition elsewhere has not been satisfactory to the general public. Articles have been published in the Canadian Engineer, from time to time, which furnish conclusive proof of the success of independent telephone competition in the United States and Europe, and if further evidence were needed to demonstrate this fact volumes might be written containing records of successful independent exchanges. It is well, however, that at this stage those responsible for the granting of franchises should proceed cautiously and ascertain what are the conditions which have produced the successful results recorded. A careful study of these conditions will show that to enable the people to have telephone service at permanently low rates, there must be local control and no overcapitalization. In other words, the competing exchanges, if not municipal, or co-operative, should be controlled by local capital in which there is no watered stock or bonded indebtedness. If franchises are granted to syndicates representing outside capital, who are in reality only promoters, whose object is either to bond the plant, or float operating companies, retaining for themselves a large amount of watered stock, upon which subscribers have by their rentals to pay dividends, the result in the end will be failure, and the tightening still further of the grasp of the monopoly. A company has recently obtained a Dominion charter, and with a capital of only \$1,000,000 they propose to build exchanges and construct long distance lines throughout Canada in competition with the "Bell" Company. It is obvious that this amount is totally inadequate to carry out the objects for which the charter was obtained, and it is further stated that the company propose to accomplish their purpose by a number of local companies bearing different names, and which we assume will be subsidiary to the existing corporation. This means that the present company will have a large interest in each subsidiary company, may, in fact, control them.

While favoring the advent of independent telephony in Canada, we confess that we should like to know something more regarding this company's future policy, before any operating franchises are given away. We believe that competition should come from the people, as it has done in the United States, with few exceptions, and therefore if local companies are established, it should be possible to accomplish this without the necessity of their being promoted and controlled by any corporation having its management in one Canadian city or the United States. One of the chief reasons for the unpopularity of the "Bell" Company is that its system of centralized management keeps it out of touch with the local needs and sympathies of the subscribers to its exchanges in all parts of Canada, and we do not wish to see this policy duplicated in independent telephony. We have also noticed that the financial success of the independent telephone movement in the United States has, in recent years, resulted in the consolidation of a number of companies, and the present indications are that the most