

telephone, and is only useful for short distances at present. I understand it is to be further perfected, when, if satisfactory, we could make very good use of it for the transmission of messages between suburban and chief offices.

#### TELEPHONE EXCHANGES.

On my arrival at Vancouver I was astonished to find that the number of telephone-exchange connections was about twice as many as those in Wellington, although the cities are about the same size, and Wellington rates are considerably cheaper. I was unable to account for this at the time, and could get no satisfactory explanation. In Europe I obtained information which I considered rendered it advisable that I should revisit America, where I went thoroughly into the question, and endeavoured to ascertain why the proportion of telephones to population was so much greater in cities of the size of Wellington than in Wellington. A favourite answer to inquiries was that the Americans had the telephone "habit"; but it took some time to resolve a general statement of the kind into useful information. Eventually I came to the conclusion that extraordinary exertions have been made in the last few years to increase the number of telephone connections. In some cities, for example, it was considered that a new era in telephone-extension had begun when party wires, some of them carrying as many as twenty subscribers, were pushed in preference to single connections. As telephone-rentals on party lines were much lower than for individual lines, there was an extraordinary development, which eventually resulted in a more or less inefficient service. At the same time, the result of educating the people to the use of the telephone had been attained, and telephone companies are rapidly inducing their subscribers to take connections on party lines carrying no more than the number of subscribers which the best authorities now consider the maximum which offers a perfect service. These numbers are,—On city lines, 2 subscribers; on suburban lines, 4 subscribers.

The next method of increasing the number of subscribers was the facilities offered for the installation of branch exchanges, which now reach a large proportion of the total connections. It is very noticeable in Canada and America that in even comparatively small hotels a telephone is provided in every room. No charge is made to guests of the hotel for telephoning within the building or for incoming calls from outside, but all connections with the exchange are charged at a rate of 2½d. to 5d. each. Similar branch exchanges are to be found in nearly every business house.

The two headings, party lines and branch exchange, are really responsible for the great use of the telephone. At the same time, unceasing efforts are made to increase the number of subscribers by personal canvass and otherwise, it being recognised that, notwithstanding the great development of the telephone within the last few years, the field is still comparatively an open one.

In the exploitation of the business the telephone companies are assisted by the almost universal system of the measured-rate charge—*i.e.*, a charge for each call made over a certain number. For branch exchange work this is the only method that can well be employed, as no hotelkeeper is likely to go to the expense of paying a flat rental for 100 or 200 telephones for the use of his guests. In such cases telephone-calls are purchased by the hotelkeeper at per thousand, and retailed by him at a price which will give him a reasonable profit and pay for the cost of his exchange-attendant.

Similarly, to make party lines attractive it is advisable to charge only a nominal rental, the calls being paid for.

While I am not convinced that the measured-rate system should be adopted in its entirety, I think it is likely that the rigid flat rate, as in use in New Zealand, is largely responsible for our failure to develop on the lines I have indicated, and it would be well to consider whether a measured rate could not be adopted for branch exchanges, &c., which would give satisfaction alike to the Department and telephone-users: that is to say, the present flat rate to be maintained for single connections, particularly with private residences, and a measured rate introduced for branch exchanges and party lines.

If this were done, and a reasonable canvass made, I believe we should increase our exchange connections by 50 per cent.

#### PNEUMATIC TUBES.

It is some time since I brought up the question of the installation of pneumatic tubes in the principal centres for the purpose of conveying telegrams and express letters to and from suburban offices. The only point in doubt was the best form of tube. With the exception of the pneumatic tubes in London, which have been installed for many years, practically all the modern pneumatic tubes of any value seem to have been erected by the Lamson Company. This firm has representatives in New Zealand, and is prepared to supervise the installation and guarantee its work. While the installation of pneumatic tubes can conveniently stand over until the new buildings at Auckland and Wellington are ready, it would be well to begin the preparation of plans of the routes proposed. The installation of the tubes should result not only in a great saving in time, but in a considerable reduction of staff in suburban offices. At present telegrams have to be transmitted by Morse instrument, which necessitates the employment of Morse operators at many suburban offices. When messages can be transmitted by tube these operators will not be required. As the tubes proposed will be of sufficient diameter to carry single letters, a fair business will probably result from the sending of express letters, which can be transmitted from point to point as speedily as telegrams.

#### SANITATION.

Post-office work is as a rule very dusty, but it was only in London that I found any satisfactory method of overcoming this, by the application of a preparation which appeared to be of a