

TheMotor.

MOTOR NOTES.

By "ACCUMULATOR."

GREAT Britain's total consumption of petroleum for the year 1905 was only about 13,000,000 gallons, which was derived from all parts of the world. An enormous number of stationary engines, aggregating many hundreds of thousands of horse power, more particularly in Germany, which have been using petroleum spirit, are being adapted to use producer gas made from low-grade fuel.

Messrs. Merryweather and Sons, Ltd., advise us of the success of their motor fire engines for the London Fire Brigade. The firm are giving special attention also to petrol motor boats for fire prevention. One of these for the Rio Tinto Company's wharves at Huelva, Spain, will have two six-cylinder motors, driving propellers as well as providing the power to drive two treble-barrel "Hatfield" pumps, giving a delivery of 1,200 gallons per minute, enabling several powerful streams to be thrown at once.

Leipzig has its motor cabs now. Prince Louis of Bavaria, heir to the Bavarian throne, who manifests a lively interest in improvements of traffic, inspected the newcomers on March 4th, and, at the invitation of the directors of the company, allowed himself to be driven back to the palace in one of the cabs, his Highness thus having been the Leipzig cabby's first fare. Three days afterwards the cabs were plying for hire by ordinary mortals. As previously explained, the vehicles are the Adler type, and are fitted with taximeter for mechanically registering the fares.

Mr. W. O. Horsnail, Assoc. M.I.C.E., Assoc. M.I.M.S., writes from Ipswich to suggest a non-puncturable pneumatic tyre constructed on the rubber sponge system. Mr. Horsnail propounds:—"Supposing a tyre, consisting of an outer cover filled with rubber, suitably prepared to produce these rubber bubbles, were vulcanised under a high pressure, the result would possess the resiliency of the ordinary pneumatic tyre, whilst being practically unpuncturable. Although tyres made in this way might be too heavy for bicycles, there is no reason why they should not be used in vehicles, where lightness is not so essential."

The export of rubber from Ceylon has increased from 30,000lb. three years ago to the rate of 150,000lb a year at the present time. At the last general meeting of the Ceylon Planters' Association, Mr. William Forsythe, the chairman, stated that when the period of over-production came round Ceylon would be well to the front both by reason of its cheap labour and the excellent way this class of product was worked by the agricultural community. Mention of over-production in connection with rubber is indeed balm to the long-suffering motorist, who still has to pay very high prices for his tyres, but we fear it will be some years before a reduction can be looked for.

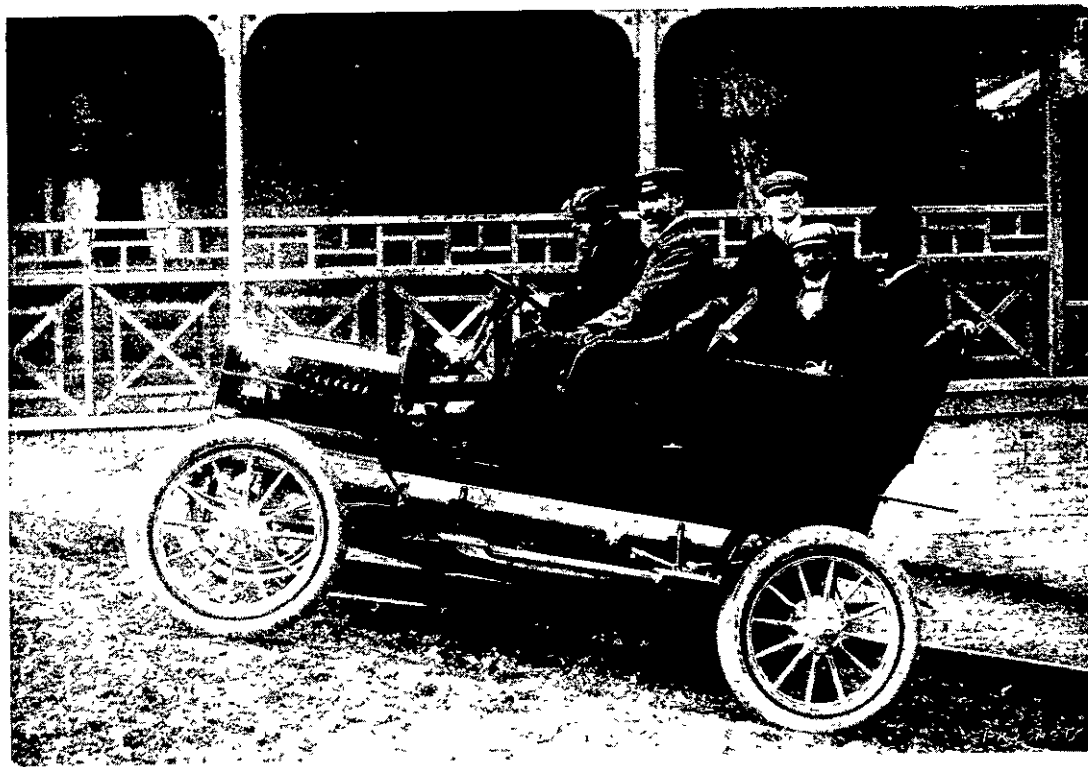
Says the *Railway News*:—"The use of omnibuses and motor wagons as a means of establishing communication between the railways and towns and villages which are situated at some distance from a station has steadily grown in favour during the past year, and most of the leading companies have inaugurated one or more service of this kind. Of course, difficulties have been experienced from mechanical defects in the construction of some of the vehicles, as well as from the rough condition of the roads in some districts, but it seems probable that road-motor services, organised by the railway companies, will largely supersede the light railway as a means of developing districts hitherto inadequately provided with means of communication."

The new 40-h.p. Crossley car made its first appearance at the Edinburgh Exhibition, and

altogether created a most favourable impression. The design is extremely well thought out, and its construction embodies many improvements on the earlier Crossley cars. The engine is still fitted with the Zenia carburetter, which is probably one of the most thorough developments of automatic air regulation, and has been still further improved by the fuel feed being cut down as the speed of the engine is reduced. A further refinement is fitted in the shape of ball bearings to the clutch collar; this is a refinement which is not incorporated—to my knowledge—in any other car, and it certainly tends to overcome a difficulty occasionally found in connection with lubricating this part of the mechanism. The clutch itself is of the metal-to-metal type, and can be most readily adjusted. Altogether, both Messrs. Jarrott and Letts and Mr. J. S. Critchley are to be complimented upon this latest addition to the cars on the market.

We are indebted to the Scott Motor and Cycle Co. for the following particulars of an interesting hill-climbing trial recently carried out by a Reo car:—

The course chosen was Port street, Wellington, which has a grade of 1 in 4½. Three runs were



A REO CAR CLIMBING A GRADE OF 1 IN 4½.

made, the two first being taken on the high-speed gear to a point half way up the hill, and the remainder of the journey on the second speed. The third run was negotiated on the second speed to the half-way stage; and, after standing half an hour (the motor being cold), a fresh start was made, the journey concluding with two persons in the car. The first two trips were undertaken with four persons in the car—Mr. Schwarz, who directed the operations, and drove during the three trips weighs 14 st. The car, which so successfully passed through the above trials, has a 16-h.p. double-opposed engine, and was fully described in the March motor number of PROGRESS.

In motor vehicles, as a rule, the drive is on the back wheels, which is exactly the reverse of what takes place in horse-propelled vehicles. This is due, as is well known, to the fact that in the case of mechanical propulsion the front wheels can only be driven by means of complicated mechanism which entails much greater difficulties than the ordinary rear drive. It is only possible to utilise the front wheels both for driving and steering when electricity is the motive power employed. A system of this kind which is used in Vienna is known as the Lohner-Porsche car. In this vehicle the armatures of the electro-motors are inserted

into the front wheels, and the field magnets are attached to the hubs of the axle. The electro-motors under this arrangement make the same number of revolutions as the wheels, whereas usually a much higher speed is necessary in the case of the motor. Another disadvantage of this plan is that the electro-motors are exposed to all the jolting of the uneven track which, however much it may be diminished by the pneumatic tyres is always much more severe than in a vehicle carefully supported on springs. As no gearing is used on the above system special provision would have to be made for changes of speed. With a high rate of speed on good roads a satisfactory working result can be attained, and trial runs have shown the consumption of energy to be 56 watt hours per ton kilometre.

Motor Vehicles.

By J. D. SIDDELEY.

It is only recently that automobiles have demonstrated that they can in certain directions successfully compete with horse-drawn vehicles. Naturally, some types of vehicle have proved partially unsuccessful, and experience has shown where various improvements can be made in all existing types. The many hours during which motor omnibuses are kept in commission day by day have shown up little defects in the machinery which would never have been found by running pleasure cars. Unfortunately, both for omnibuses and commercial vehicles generally, the public, buyers and users alike, have been educated to an inflated idea of the horse power and capacities of petrol engines, with the consequence that performances have been expected that, to say the least,

are impracticable. It is not to be supposed that any machinery can run 20 hours per day, under the worst possible conditions, for seven days per week, with very inadequate supervision, without having stoppages for minor failures in necessarily delicate parts of the machinery, causing delay to passengers, and tending to develop the feeling that motor vehicles are "unreliable," whereas with sufficient and systematic overhauling and supervision, the majority, if not all, of these annoying stops for petty adjustments could be avoided.

Petrol Tram Cars.

A few Continental towns have been testing the merits of petrol tram cars recently. English enterprise put the internal combustion engine to the test for tram-car propulsion some ten years ago, but the system was given no fair trial. Excessive capitalisation and weak financial control killed the chances of what might have, subject to careful management during the initial stages, rendered unnecessary the adoption of electric traction for road passenger transport. Where tram cars are admissible, or where circumstances exist which render the continuance of a railed