The ....Motor.

MOTOR NOTES.

BY "ACCUMULATOR."

Taximetre Development.

In Marseilles, France, forty taximetre motor cabs will soon be placed in service by a stock company, and another company expects to begin business with fifty cabs in May or June next.

The Motor in London.

According to the statistics of the London County Council, there are at present in use in that city 4,024 cars and 1,747 motor cycles. 1,157 cars and 717 motorcycles changed hands during 1906; 16,759 drivers' licenses were issued; and £8,339 was received in fees.

Petrol Supply.

An inquiry which was recently held in England by the Motor Union as to the supply of petrol, and the possibility of the supply being exhausted, seems rather purposeless. in view of the figures shown in connection with the returns of the imports of the spirit. During 1906 no less than 26,792,687 gallons were imported, as compared with 18,658 391 gallons in the previous year.

A Sensible Plan.

At the last meeting of the contest committee of the Automobile Club of France, it was decided that the commercial vehicle contest, announced for May next, shall be held over a star shaped itinerary in the vicinity of Paris and through the northern and eastern portion of France, with daily stages of 95 to 125 miles, and that the awards shall be based on the useful ton-miles.

Anti-Skid.

In the British motor bus anti-skid competition, after all devices considered impracticable by the committee had been eliminated, there remained twelve inventions which were submitted to preliminary tests at a London garage on February 5. Of these, five were of the type embodying metal rings located between twin rubber tyres; six consisted of special tread forms; and one consisted of a six-wheel vehicle with steering wheels in front and rear.

Chauffeur, Chassis & Company.

Everything in the industry has long been known by some French name, and every time this reminds the world of the superiority of the French in the matter of motor enterprise, and construction. The British makers are making a serious attempt to wrest this reputation from the hands of their neighbours across the Channel. They are striking at the root of the evil. The Kaiser is striking at the nomenclature, which is a more direct but less radical method than bettering the practice. The Kaiser has turned his attention to motoring terminology. He objects to the word "chauffeur," and henceforth those in his employment will be styled "wagen-fuehrer," that is to say, car or waggon drivers. He also objects to the "chassis," "tonneau," "limousine," "garage," and sundry other French descriptive words, for which he has ordered plain German terms to be substituted.

A New Valve.

A Swedish inventor has produced a valve to be applied to automobile engines, which, it is said will result in much smoother running than ordinarily obtained. It is merely a small plug placed in the exhaust valve, and is kept open by a spring, except on the explosion stroke, when the action of the explosion forces it shut. The effect may be described as taking the edge off the explosion. At high speed the arrangement is inoperative. Exhaustive tests, it is claimed, have shown the device to result in very smooth running at slow speeds on several types of motors.

Christchurch.

Mr. Henry J. Ranger, the well-known motor specialist, has lately taken posession of his new garage, which is situated at 174 Gloucester-street, and close to Colombo-street, Christchurch.

The garage is a single-span brick building, with a concrete floor, space for cars being 80 x 45ft. It is well lighted. and is fitted with a large car turntable, which is a very great convenience and greatly appreciated; inspection lamps, pit, Ranger's self-setting car stand, a very handy appliance; a Lake & Elliot vulcanizer, which will vulcanize two covers and two tubes at the same time; and the very latest charging plant, consisting of an electric motor and generator, which ensures against accumulators being charged at a too rapid rate. Lockers are provided, also a suitable wash down. Mr. Ranger, in providing cloak rooms and lavatories, and an expert who lives on the premises, is undoubtedly catering for the wants of motorists most fully At the time of our visit the garage was in full swing, and judging from appearances, Mr. Ranger has every reason to feel satisfied with his fine establishment.

Ins and Outs of Motoring.

(*Specially written for* PROGRESS)

IGNITION.

Motorists are mechanical or otherwise, and it is obvious enough that the mechanic and his machine are entirely in harmony, given effeciency in both; whereas the man whose brain has no mechanical corner, keeps his car going by dint of close attention to instructions and a good deal of luck of the right kind; when, through blind application of the instructions they fail, he fails too. The man who has the entire mechanism in his mind's eye, and the theory largely diluted with practice in a cool corner of his brain, is bound to derive immense satisfaction from the pastime. His less well equipped brother in the game subiects himself to a peculiar and subtle exasperation which is unequalled in any other game, and his poor car groans under the caresses of his spanner and other instruments of persuasion. He, however, to give him his due, develops a heroism unsuspected perhaps, and fights his car with both hands, winning some battles, losing many, and paying up ungrudgingly when the professional tamer saves the day.

But there is one vital part of a car's economy which undoubtedly sticks up all alike, mechanical or not, with few exceptions; that is the ignition.

A really intimate knowledge of the bed-rock principles of electricity is not easily attained. A book alone however explicit will not afford it, and how many have had time or opportunity to work at the science practically and get a real grip of it?

Perhaps the following explanation may dispel to a certain extent the fog that so often prevents a motorist from locating and remedying defects in the ignition apparatus of his car.

By way of definition it will be sufficient to say that electricity is a force which can be generated in several different ways, and can be confined to certain channels, pre-supposing that, as a current, it flows in a certain direction.

It will pass through all known substances; with great ease through many, *i.e.*, metallic and other *conductors*; with great difficulty through others, *i.e.*, mica, pure indiarubber, porcelain, dry air, etc., all known as *insulators*.

For convenience we talk of a current of electricity flowing in a copper or other conductor in one direction or the other. This implies a circuit *i.e.*, starting from and returning to a given point, say the source of supply. The circuit may be simply a copper wire affording an easy passage, or a similar wire interrupted by an air gap making the passage very difficult.

In the ordinary type of accumulator and coil ignition both these kinds of circuit exist; one path very easy to traverse (the primary circuit), the other with an air gap, very difficult (the secondary circuit).

It will be apparent that the current in the secondary circuit requires much more energy to accomplish its journey, which includes a jump across a gap through an insulating medium, than the primary consisting of an uninterrupted metallic circuit and the acid solution in the accumulator, which is a good conductor when the specific gravity is correct.

We thus arrive at the conclusion that a current must have an energy proportional to the difficulties of the path it has to traverse.

For practical purposes, the analogy of a current of water circulating through pipes will explain the behaviour of a current of electricity in a conductor.

Water at a high level tends to flow to a lower level. Electricity at a high pressure, or potential, tends to flow to a part of a circuit where the pressure is lower.

The greater the head of water, the greater the pressure, therefore a greater quantity of water will flow in a given time from the pipe end at the lower level. The greater the pressure or potential of the electricity current, the greater the magnitude of the current that will be forced through the conductor.

A small pipe offers more resistance to the flow of water than a large one.

A small wire offers more resistance to the flow of electricity than a large one.

Pressure in water pipes is expressed in pounds to the square inch.

Pressure in conductors is expressed in volts, the volt being the unit of electrical pressure, or potential. The unit of quantity of electricity passing through a conductor need not be considered. The intensity or magnitude of an electric current is expressed in amperes—here the water analogy is not strictly correct—the intensity