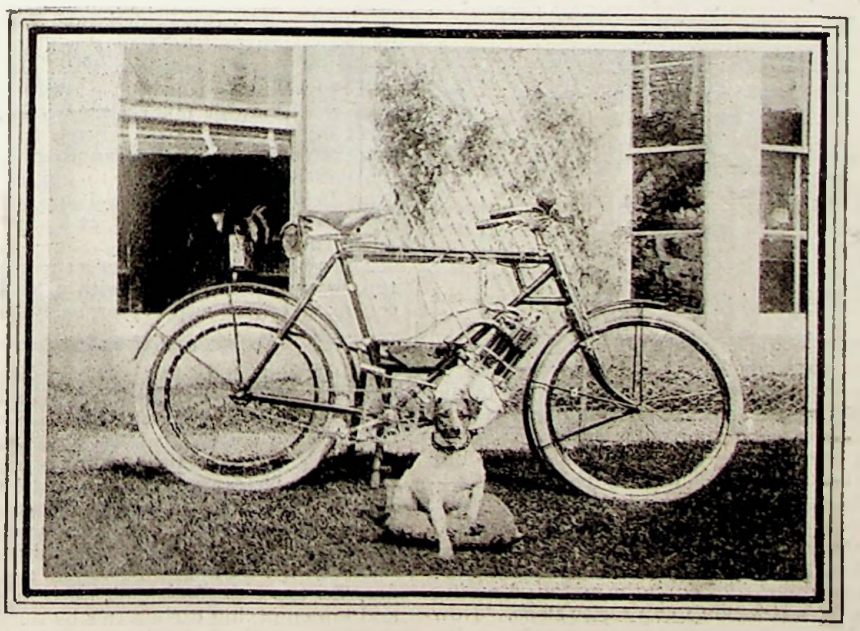
Motor Cycling & Motoring

Vol. I, No. 21,
July 2nd, 1902.

A TRIAL RUN ON THE NEW MOUNT.

By E. DOUGLAS FAWCETT.

Good! A fine Devonshire morning at last, and with it, of course, an opportunity of taking a trial run on the new "Excelsior," and comparing its powers up hill and down dale with that of last year's callously discarded mount. The accumulators being found to register 4·1 volts, the first thing is to see to the condition and adjustment of the platinum-tipped screw, and, having settled this preliminary to one's satisfaction, to proceed to test the sparking with the plug laid open to view on the cylinder top. All well! The plug screwed in again, it remains to fill the lubricating tank with "Motorine A," open the gravity feed tap, and give the crank chamber its required dose of oil to start with—if the chamber is quite unlubricated, two full charges, as measured by the metal vessel that is to be noted on the pipe which connects the lubricating tank with the chamber. Then all the ordinary cycle parts, not forgetting the ratchet mechanism of the "free-wheel," are oiled with ordinary lubricant; nuts are well tested, and then the brakes; the petrol tank is filled, and the carburetter charged till the float-indicator rod is about level with the upper side of the top tube, when a move is made to the road. One more look, however, at the handsome mount ere it is launched on its wild career. May it go as well as it looks! Well, it ought to. What a huge engine! Yes, and a heavy one. It is pleasant to run this 2¾ h.p. motor with its big reserve of power and wide bearings. Pleasant also to enjoy the comfort which the long wheelbase necessitated by it insures; but there is, of course, the weight drawback. It is not an amusing exercise to coax this monster up steps, or even to start it up a stiffish slope; and in the event of a breakdown there are livelier ways of spending one's time than in pedalling it along Devonshire roads. However, if one will select high-powered machines in preference to standard pattern ones, an incidental drawback of this sort must be discounted. And, all things considered, I think that the good rider will have no cause to regret his choice of the heavier steed—less handy and even cumbrous, perhaps, but a superb "goer" when once fairly started. For town use the 1¾ h.p. machine is unquestionably the better and safer, but for the expert rider who lives in hilly country, and yearns for great power and speed when required the 2¾ long base machine is the right mount. But here a caution. The belt must be a suitable one, as the ordinary twisted hide affair is unsatisfactory when used with so powerful a motor—it slips and gives unduly, while "pulling through" of the fastener is far too frequent. Take my advice and use a "Lincona," a built-up belt of three, as it seems, separate layers of leather (of varying qualities) joined together by brass rivets. This belt gives a superb "bite," never slips when reasonably tight, and, owing to the presence of the rivets and the thickness of the leather, does not allow the fastener to pull through.* It is well worth the extra cost. The fastener will sometimes break, but that is a detail which a very short stop should remedy,



Ready for the Trial Run.

*NOTE.—I am informed that there is still running on a 1¾ "Rex" machine a "Lincona" belt that has done its 9,000 miles. This is remarkable, if the mileage is accurately reported. But, of course, the belt used with a 2¾ engine could not be expected to last as well as this "record holder."

provided always that you are a reasonable person who carries spare hooks and like essentials in your pouch. Lack of these fastening hooks gave myself and a friend an experience of what pedalling (and walking with!) heavy motor-bikes for five miles in hilly country really means. We have not since courted a like punishment. But to return to the trial trip.

Twisting round the chimney-cap so as to admit air to the carburetter, I half open the air valve (if faulty, the adjustment is remedied as we go), push the mixture or quantity lever half forward, lift the exhaust valve (the handle operating which on the Excelsior is seen behind the air lever), mount the machine, pedal a trifle, switch on my primary current by a twist of the left handle grip, and then pull back the exhaust valve lift handle. Good! she fires, and right vigorously—we are off. But no, there come misfires, a startling compression, and I have to get off and investigate—a couple of disbelievers in "them there motors" watching my labours the while with ill-concealed mirth. There seems nothing for it but to re-test the sparking, and after many disappointments I find the cause of the trouble. It is not a common one, so I give it. The faces of the clip holding the platinum screw cannot be sufficiently well brought together to hold the said screw firmly, so that the hammering action of the trembler gradually displaces it, and finally the "make" is imperfect; hence adjustments are useless. Recourse to a file solves the difficulty.

I can recall two other troublesome causes of misfires (95 per cent. of motorcycle troubles concern the ignition only) which deserve mention. One escaped notice for quite half an hour, when, happening to glance into my switching-grip, I found that

A Piece of Tobacco Leaf

had got into it, preventing proper contact between its brass and the metal of the handlebar. The other was due to the breaking-off of a terminal eye from the strands of wire to which it is soldered, *inside* the insulating cover. The eye, which was screwed up to the interrupter block, was in sufficient contact with the aforesaid strands to conduct the current when the machine was *at rest*, but the vibration caused by movement shook it ever and anon clear of the strands, and so caused very bad misfiring. I do not consider that these eyes—soldered to the strands as they are—are satisfactory on a machine subject to considerable vibration, and prefer now to wind the strands directly round the terminal screw, and then fix up. The result is not very neat in appearance, but distinctly effective.

Screwing up the thumb-screws of the "pear," I proceed to remount, scarcely daring to contemplate another refusal to "pom." Well, I start now with a vengeance, and am soon speeding up a stiffish slope, with mixture lever half open and sparking advance perhaps half back—delightful this! The motor working so easily suggests a splendid reserve of power!—till we top our slope and reach the level that leads towards the old Toll House and the steep hill that descends into Long Combe on the way to Paignton. The machine is flying now, and that, too, with a mere smell of petrol, as we have now cut down the gas. We reach the descent. Forward goes the exhaust valve lift lever, a twist to the grip to save current, and, lo! we are rushing down into Long Combe. Near the bottom, seeing that the road rises again, we pull back the exhaust valve lever,

Switch on Current,

pull back the advance sparking lever, and take the rise at 20 to 30. But the power is not enough; a "hang" is felt to be imminent. So, keeping the advance sparking where it is, we give her more mixture—and now more and more—and, despite the increasing steepness of the ascent, maintain our speed. And now the air lever is cautiously shifted. Yes—we are getting splendid quality mixture; it couldn't, in fact, be bettered, as the purr of the motor itself tells so clearly. Ha! now we have reached the stiffest part of the climb—more gas—all we can give—and forward, forward again, with the advance sparking lever as our pace drops, and, with the motor pomming slowly and rather heavily, we rise on to an easier slope. Now we start forward briskly, and very soon are running with advance sparking lever well back, and gas expenditure very light. It is wonderful how economically even these big engines (more suited in appearance to a trike than a bike) can be made to run. To use as little mixture as possible, and get the best results from that use, is one of the first points to which the tyro should give attention.

Very soon I reach the crest of the divide, pass a coach and an odd trap or two, and am speeding down the hill into Collaton. On the return it will be amusing to rush that hill and bethink oneself of toilsome ascents made aforetime on the ordinary wheel, or to compare the performances of the new motor-bike with that of the lively little Werner of last year. At present, comparisons run in favour of the new machine, as very properly they should. But the performances of the "old" Werner will always, on the whole, be gratefully recalled. For its horse power, the front driver was, and is, perhaps, the most efficient machine on the market, the superiority even of the 2¾ h.p. Minerva pattern mount being by no means so great as a sight of the large motor might induce some to suppose. True, in point of comfort and finish the 1901 front driver will not compare with the speed machine of to-day.

I might dilate on the loveliness of the country, but my present business is with mechanism, and I must stoutly resist the temptation. Through Collaton, and up a stiff, short hill, and now very soon I am in Paignton, and anon skimming blithely along the Torbay Road, so far without any untoward incidents. Here, stopped by

An Excited Individual

in cycling costume, I find an opportunity for rendering "first aid" to a motor-trike, not injured, indeed, but obstinately refusing to "start." And once again I note that not unfrequent phenomenon of a rider who mounts a trike without any apparent knowledge of its mechanism. Indeed, the said rider informs me that, having only just received the machine, he has had no time to find out anything about it! Of course, as will be anticipated, a glance at the contact breaker shows that ignition troubles are the cause of his delay, and he is soon sent on his way rejoicing.

From Torquay to Newton Abbot runs a good but undulating and somewhat curving road, with one fine speed bit about halfway between the towns. The dust is very bad, and the spectacle of whitened stockings, and the discomfort caused by a pair of dust-fringed, smarting eyes, almost convert me to the policy of donning goggles and gaiters. From Newton to Totnes, thereby "completing the circuit," I hap on one of the hilliest routes the cyclist can well choose. Breasting the well-known hill that awaits one after crossing the railway bridge about midway between the towns will test the climbing powers of the motor-bike very severely. Even with the 2¾ a touch of brisk pedalling is called for—if only to ease the engine—while a 1½ machine will not scale it without some smart auxiliary work on the rider's part. From this point onwards the run homeward is uneventful, another formidable ascent closing the trip and carrying me to my abode perched on the hill over Bridgetown. The trial has been a complete success. I have no hills to fear, and, at a pinch, I can certainly do my 35 on the level.

The 2¾ Excelsior I consider a superb mount, but whether the tyro is not better suited with a lower-powered mount is, of course, an open question; probably he will be much

Safer on the Standard Pattern.

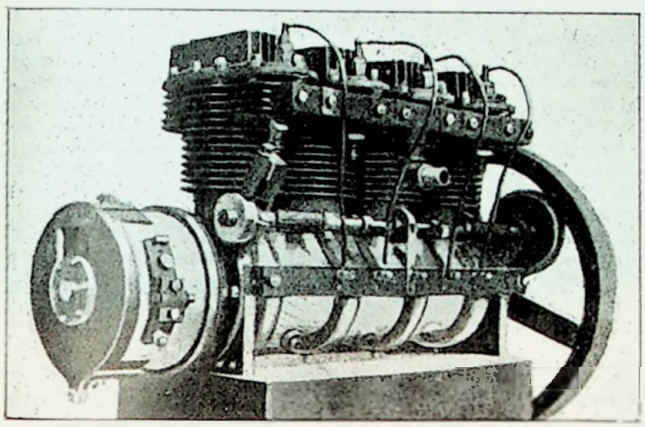
The bicycle part of this machine is above criticism, and the motor (a M.C.C. De Dion), with its wide bearings, promises to stand very long usage. A long wheelbase, admitting of the use of a crank chamber with wide bearings, and having ample clearance of the pedals, is important; and the long wheelbase yields more comfort and a sense of greater security altogether—try it! As regards comfort, the 2¾ machine is very satisfactory. The engine is not overrun, and will work for ordinary needs on a mere "whiff" of petrol. Of improvements in the mechanism I would suggest the replacement of paraffin tap on cylinder, oil waste tap below crank chamber, and tap emptying carburetter by nuts, which are much more satisfactory. In fact, all the said taps in the two machines here are now useless, and have to be removed.

INVENTION.

The latest improvements in motors, motorcycles, and accessories.

A Four-cylinder Air-cooled Engine.

The Franklin Manufacturing Co., of Syracuse, U.S.A., have recently put a four-cylinder air-cooled motor upon the market. It develops 7 h.p. at 1,000 revolutions per minute,

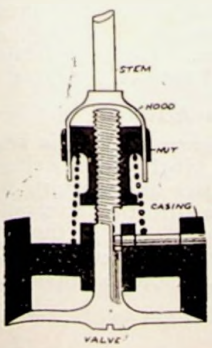


and the total weight, inclusive of large fly wheel, is 300 lbs. It is interesting to note the position of the contact breaker shaft, with its four contact blades and cams. The box on the left contains the transmission gear. So far, the adoption of air-cooling has been a great success in this type of motor, and there seems no reason why it should not replace the water-cooled motor of similar power for motorcars.

An Efficient Accumulator for Ignition Purposes.

A type of accumulator that gives very good results for motor work—as we know from actual experience—is the "Hart" accumulator. A special form of grid is adopted giving a large active surface, and there is, moreover, no possibility of the lead oxide detaching from the plates and short circuiting them—a usual cause of trouble with some types. They are at present made up in separate vulcanite cases in two sizes, three plates having nine ampère hours capacity and five plates 18 hours. Another good feature about the cell is its ability to keep its charge for long periods without leakage, a battery in our possession being fully charged after being two months out of use. The price comes out surprisingly low, and a line to the company's works at Stratford, London, or Temple Chambers, Brazenose Street, Manchester, will elicit further particulars.

An Improved Inlet Valve for Motors.

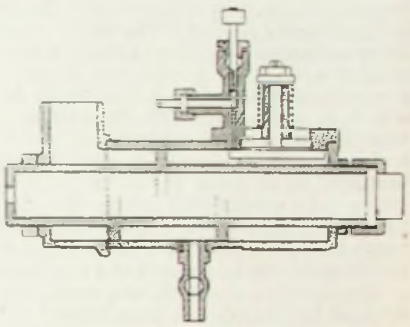


An arrangement for adjusting the amount of lift of an inlet valve is illustrated. The spindle of the valve is screwed, and a nut threads on to it so as to serve as an adjustable stop by pressing down on to the valve casing. The nut is turned by means of a hood which has slots cut in it, and engaging in wings on the nut, a shaft or stem attached to the hood enables it to be turned from some convenient position. The inventor is Mr. Leonard Jones, Glenfern, North Finchley.

An Effective Spray Carburetter.

We recently had an opportunity of examining the carburetter fitted to the Norfolk motor-bicycle, and were much impressed with its certainty of action and very simple construction.

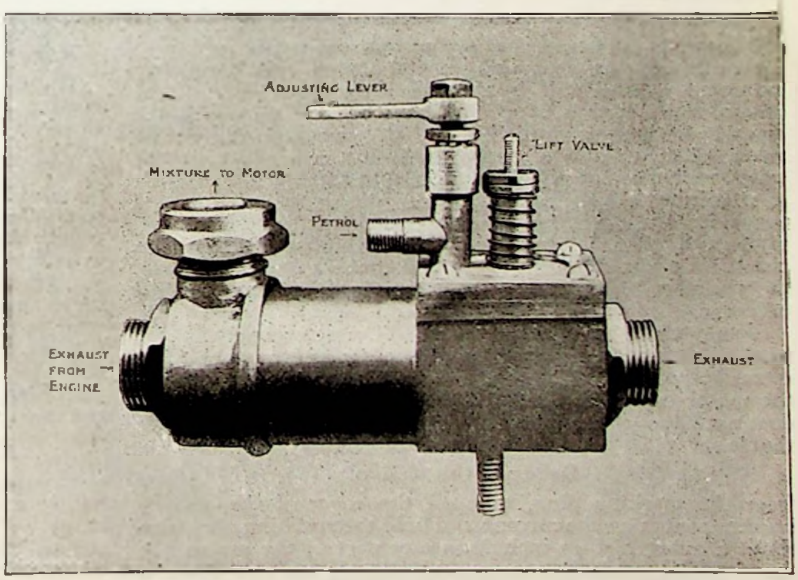
It consists simply of a lift valve, open to the air on the top side, which is opened by the suction stroke of the motor, and closed by a spiral spring. The valve has a broad face, to the centre of which the petrol supply is brought so that both the petrol and air are shut off simultaneously when the valve closes. Beneath the valve is fitted a tube passing from end to end of the carburetter, and through which passes part of the exhaust from the motor. In the annular space between this tube and the casing, baffle plates are fitted, which cause the air and petrol to pass round the hot tube. A wire gauze diaphragm is also fitted to further intermix the petrol and air.



LONGITUDINAL SECTION OF CARBURETTER.

When in action, the motor on the induction stroke creates a partial vacuum in the carburetter, it sucks open the lift valve and allows a strong inrush of air and petrol to enter the hot chamber. It is at once intimately mixed and vaporised and drawn into the combustion chamber of the motor.

The petrol is fed by gravity, but as the feed depends more on the suction than on the force of gravity, the supply is all that can be desired as regards steadiness.



Readers having ideas for Inventions can obtain free advice and particulars as to the best way to protect a patent by communicating with this Journal. All letters should be addressed "Patent," care of "MOTOR CYCLING."

FOR THE BEGINNER:

SELECTING A MACHINE AND LEARNING TO RIDE IT.

We take it for granted that the prospective motor-cyclist is able to ride a bicycle. The next step will be to select a suitable machine out of the large number of excellent machines now on the market. In this he will be well-advised to get the opinion of someone who has had some experience with motor-bicycles if possible. But this is not always possible, and in this case his best plan will be to put himself in communication with one or other of the standard makers, stating his requirements. Then, the columns of "MOTOR CYCLING" are always at his disposal for his preliminary guidance. Above anything he must be careful to steer clear of what may be termed "freak" machines of high power and great weight. The standard power now adopted as a maximum is 1½ to 1¾ horse power, which is quite sufficient for taking the rider over average undulating roads at a good speed. Where very hilly country and poor roads abound it would be advisable—unless he is prepared to do some pedalling—to go in for a 2 horse power motor; in exceptional cases, the 2¾ horse power might be necessary, especially if it is desired to attach a trailer. On level roads it is quite possible to attach a trailer to a 1½ horse power motor and keep up a speed of 12 miles per hour.

The machine to hand, the next step will be to get familiar with all the details. A clear idea of the working of the engine and the ignition system is very important. A stand for jacking up the motor should now be purchased, also a supply of petrol and lubricating oil. In obtaining this last, the best quality lubricating oil for *air-cooled* motors must be asked for. The petrol and oil tanks must now be filled and a few drops of paraffin injected through the compression tap of the motor. Next place the rear wheel of the machine on the stand—a step being provided to each side of the axle for this purpose. It will now be possible to

Mount the Machine

and start the motor up, first seeing that the petrol supply to the carburetter is open and that the plug and handlebar switches are closed, and also draw back the spark lever. If an exhaust valve lifter is fitted this must be kept up whilst the machine is vigorously pedalled. Whilst pedalling, release the valve, when a series of sharp explosions will occur in the cylinder of the motor. On now pushing forward the spark lever (termed advancing the spark), the explosions increase in rapidity and the motor begins to gather speed and, of course, to drive the rear wheel of the bicycle without the help of the pedals. Do not allow the speed to increase to any extent, as, there being no "load" on the motor, the vibration would become excessive.

Should the motor fail to start it will most probably be due to the mixture or proportions of the air and gas not being correctly adjusted. Try opening or closing the air tap till the motor begins to fire regularly, if this adjustment still does not allow of the motor starting it must be the sparking that is at fault. Just switch off the current and

Detach the Wire

from the sparking plug, take off the cover of the contact breaker, switch on the current, and hold the sparking-plug wire about a quarter of an inch from any part of the motor. If the trembler blade is now moved sharply up and down a bright spark should pass from the wire to the motor, if the ignition gear is in good order. The plug might just be unscrewed from the combustion chamber and notice taken that the points are set about $\frac{1}{32}$-inch apart, then replace it and attach the wire securely to it again.

Should you get no spark the electrical details must be carefully inspected according to the instructions given on electrical details.

If the motor is got to work satisfactorily on the stand, the next thing will be to take it out on the road and learn to ride it. As a rule the motor is sent out properly lubricated for a run of 15 or 20 miles to start with, so that it will not be necessary to touch the oil pump for the present. Select, if possible,

A Quiet Road

with an easy slope, and, for the first essays, it will be advisable to remove the belt and pedal the machine some distance so as to get accustomed to the steering and increased weight of the machine. As soon as confidence is attained, the belt can be replaced, noting that it is not too slack or too tight. Then, switch on the current and note that the spark lever is drawn back, open the exhaust valve or compression tap. Mount the machine and pedal smartly so as to obtain a good momentum. The valve lifter may now be released, when, if all is in good order, the motor will begin to fire and pick up speed. To begin with, keep the speed as low as possible, giving the motor a little assistance with the pedals if necessary. As soon as confidence is attained, the spark can be advanced a little by pushing the lever forward. The speed can be regulated to a nicety by moving the spark advance lever backwards or forwards.

The Use of the Valve Lifter when Riding through Traffic.

In addition to its value in starting the machine, the valve lifter enables the speed to be regulated by the simple reason of its allowing the force of the explosion to be varied. If the exhaust valve is prevented from shutting tight the gases are not compressed to the full extent, and when the explosion takes place part of the force is lost as it passes into the air through the silencer instead of exerting its full effect in driving the piston down. The motor, therefore, works more silently, and this is a great consideration when passing restive horses in traffic.

Riding on Greasy Roads and around Corners.

The danger of side-slip when riding a motor-bicycle is no greater, and, in fact, numerous riders say it is actually less, than when riding a safety bicycle, providing certain common-sense precautions are observed. These are, first, to keep the speed low and use *both hands in steering*, although it is quite permissible to ride single-handed, or even hands off, when the roads *are dry*. When a greasy stretch of road is struck, at once reduce the speed to, say, eight miles an hour, and, if you get in ruts of thick mud, open the exhaust valve and pedal till you get on to a safe stretch again. When riding in the dark on wet roads, try and keep as near the centre or crown of the road as possible. When taking corners as wide a sweep as possible should be taken, and, for the beginners, it would be as well to shut off the power, as it must be remembered that a motor-bicycle naturally tends to run in a straight line and the slower it is running the easier it will be to steer it round a corner—a sharp turn, especially if the road is wet, will be likely to result in a capsize. If an exhaust lifter is not fitted to the machine, the controlling must be effected by the switch handle and judicious handling of the brakes. These must never be jammed hard on unless in case of emergency, as serious damage may result to the tyres. The momentum would drag the machine along and wear a "flat" on the tyres.

Helping the Motor up hill.

A certain amount of practice is necessary to get the best results out of the motor for hill-climbing. If the hill is a short one it can be rushed by advancing the spark and working up the speed. If you are running with the throttle valve only partly open it may be necessary to open this full as the top of the hill is neared. Immediately the run down is commenced lift up the exhaust valve full and cool the motor as much as possible.

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OPINION.

Paris-Vienna.

Our two representatives carried out the scheme mapped out for dealing with what we consider to be one of the most important motor events of the year, and we think that the outcome of their "hustle" of a thousand miles, appearing upon the succeeding pages of this issue will not prove uninteresting to our readers. From the negatives taken on Thursday morning and afternoon, prints were being shown to interested French spectators at Belfort early on Friday morning and they could not quite understand why "ces Anglais" should want to do things with such rapidity. These will be the first photos of the race to be published in any paper—English or French—and the account which they accompany appears some days before that of any other motor paper. We consider the importance of the event sufficient justification for the trouble and expense involved in getting first hand information and exclusive pictures.

Rene de Knyff rode grandly. He had a hard tussle for 150 miles with Fournier, and eventually won by reaching Belfort seven hours after the start, with actual riding time of 4 hours 16½ mins. at an average pace of 56⅝ miles an hour. Fournier had hard lines with his tyres and his crank shaft, but it must not be overlooked that these races are for the precise purpose of discovering the best methods and the best forms. It is to be noted that the Chevalier Rene de Knyff was using alcool (French for alcohol), and his win of the first stage to Belfort will no doubt do an enormous amount of good in the attempts which are being made by the Minister of Agriculture to popularise this spirit of home production. Imported spirit, or spirit distilled from imported raw material, at present holds the field, but alcool is undoubtedly gaining favour rapidly.

Apart from the question of which propelling agent is best, the Panhard et Levassor cars had the race all their own way. The first six cars to arrive were of this make and all of them heavy racing cars. Darracq scored in the class of voitures legeres, gaining 1st, 4th, 5th, 6th, 8th, and 10th places, whilst Renault's figured best in the voiturette class, with Darracq a good second. De Dion Bouton motor tricycles had matters entirely to themselves in their own class, and the Werner gained 1st and 3rd places, at high rates of speed, in the motor-bicycle class. The Laurin Klement (known in this country as the "Hewetson") gained the 2nd place, whilst Clements secured 4th, 6th and 7th places.

The Gordon Bennett Cup, we are delighted to learn, has been won by the intrepid S. F. Edge. He rode his new Napier car, but he could have well done with an increase of power, whilst his coil was doubtful. The Wolseley Co were not ready for so big a contest: next year they may do better.

The way in which tyres stood the ride to Belfort was satisfactory, and this was no doubt due to the fact that the cars were light in weight. How they will fare over the vile roads in Switzerland and Austria we wait to learn.

Our Continental representative takes up the tale from the point where our special representatives left it off, and he has accompanied the racers from start to finish. We shall give details of the later stages of the race in our next issue.

A Great British Victory.

The result of the Gordon-Bennett Cup race is of high importance to the British motor industry, and it is impossible to exaggerate the greatness of Mr. S. F. Edge's performance, or to withhold admiration for his dogged determination. For the first time in its history, this important trophy comes to England, and as it is one of the stipulations of the contest that it shall be raced for in the country to which the winner claims allegiance, it remains to be seen whether our authorities will recognise the importance of the win to the motor industry of Great Britain, and sanction the holding of the next Gordon-Bennett cup race over British roads. We hope they will, for such a contest here, properly conducted, would give a tremendous stimulus to the motor trade. To Mr. Edge, who has steadily persevered, until at last his ambition is fully rewarded in his latest brilliant achievement, we extend our very hearty congratulations. In the old days when cycling held his attentions he was always admired for his skill as a wheelman and for the dash and determination of his riding on road and path, but more particularly on the road. He himself will admit that the experience gained in those early days with the cycle has been of the greatest value to him as a motorist. Another old-time cyclist shares with Mr. S. F. Edge the great triumph which we have pleasure in recording to-day, and in felicitating the plucky driver of the Napier car, we must not forget to extend our congratulations to Mr. M. S. Napier, its designer and builder. Indeed, it is a great day for motoring in this country, and we sincerely hope that the Gordon-Bennett Cup race will be contested in England next year, and that its possession may be retained by Great Britain.

"Motor Cycling" is proud of the privilege of being the first motor paper to record and to illustrate Mr. Edge's fine performance, of which in our next issue some further interesting details will be given.

Mr. S. F. Edge, first British winner of the Gordon Bennett Cup. Taken at the Start of the Race.

PARIS-VIENNA.

A Wonderful Motor Ride.—An Englishman and an English Car win the Gordon Bennett Cup for the first time. Full narrative by our own representatives on the spot.

Paris, or, rather, Automobile Paris, was all excitement on Wednesday evening. At 3 o'clock in the morning of Thursday the cars, cycles, and quads, which we had found being prepared everywhere during the day, were to start on their long journey to Vienna. Difficulties innumerable had been overcome by the Automobile Club de France, and, from what we were able to see of the arrangements made for the well-being of not only those taking part in the race and of officials, but of the public also, our greatest admiration was evoked for their thoroughness. Compared with the methods in vogue in England, the French methods were practically perfect—the natural and obvious outcome of an abundance of experience in all such matters—and particularly good were the arrangements for providing the press with information.

As we have already stated in these columns, the race was more than a single-barrelled affair. In fact, its phases were many. There was first of all the competition of the tourist vehicles, in which 57 took part.

On Thursday morning, at 3 o'clock, Champigny was a sight.

Day Was Just Breaking,

and the moon was shining high in the heavens. The spectators were unquestionably more numerous than at any previous start, and they evinced the curiosity which one would expect from a French crowd in the presence of something novel. Cyclists were especially numerous, a very large number having come out from Paris, where they had mustered together. Champigny is a suburb about ten miles from Paris, and just as morning was fairly broken the competitors for the Gordon-Bennett Cup contest formed into single file and made their final preparations. Behind them formed up the competitors for the long Paris-Vienna race. In conjunction with these two races was the one for the D'Arenberg Cup, a trophy presented by Prince Pierre D'Arenberg for the first vehicle of French make, weighing over 250 kilos., which, employing alcohol as its propelling agent, was first into Belfort. A good judge of numbers told us that there were 25,000 people on the first six miles of the route.

The Gordon Bennett Cup is raced for by a team of not exceeding three, representing the country holding the cup, and by representatives (not exceeding three) of the country challenging. The first man to complete the specified distance (not less than 500 kilos.) wins the cup, so that practically each country has three chances should three competitors start. France sent Fournier on a Mors, Rene de Knyff on a Panhard and Levassor, and Girardot on a C.G.V. The latter racer won the

AT THE START.

The scene at the start of the Paris-Vienna motor race taken specially for "Motor Cycling" at Champigny on Thursday morning last.

Osmont arrives at Belfort.

cup last year. England entered S. F. Edge on a Napier, Graham White on a Wolseley, and H. Austin on a similar car of slightly less power.

The racers were started away at two-minute intervals, Girardot being first off at 3.30. The others followed in the wake of dust-raising cars, and this was

The Eternal Difficulty,

because, in overtaking, the risk was enormous. Gabriel, for instance, got into Jarrott's cloud and smashed straight into a clump of trees at a slight bend in the road. Graham White, who should have been next to start, was not visible, so Fournier went away, and then Edge on his new Napier, followed by De Knyff. Then away went Gabriel on a Mors, the first among the Paris-Vienna drivers not competing for the Gordon Bennett, followed by Foxhall Keene in almost immaculate attire. The remarks of the spectators were rather amusing. Then the Farmans and Jarrott, all on Panhards. Pressmen who were going down the line to see the later stages could stay no longer, but we were officially informed afterwards that the task of sending away the 137 competitors in the big race, commencing with Gabriel at 3.45, at intervals of two minutes, occupied no less than four hours.

At Provins, about 45 miles down the road,

Fournier had Gained the Lead,

reaching there in 69 minutes; De Knyff was second to go through, having taken 68 minutes; then Edge, 75 minutes; then Gabriel, 73 minutes. De Caters, the two Farmans, and Jarrott followed quickly, then Girardot, who had taken no less than 102 minutes. Foxhall Keene had met with an accident, the Hon. C. S. Rolls, on a Mors, had dashed into a tree. Thus early in the proceedings began the ill luck of the Mors cars, which continued nearly all through, although De Caters, when we last saw him, was going well.

At Troyes, about 92 miles from the start, Fournier led, having taken 2 hrs. 7 mins. to reach there. De Knyff was 2½ minutes behind, having gained on the leader. Edge was 25 minutes behind

Bardeau arrives at Belfort.

Jarrott arriving at Belfort.

Fournier, and the Farmans and De Caters passed through in the next five minutes. At Bar-sur-Aube (125 miles) Fournier had a four minutes' lead of De Knyff, whilst the other riders named above had got away from Edge. At Chaumont, from the railway, Fournier was seen at the roadside in trouble. He had done 240 kilos. (about 150 miles) in 2½ hours actual riding time, because, as we might have mentioned earlier, to prevent racing through towns, a certain amount of "neutralised time" had to be occupied in passing through them. This had occupied 1 hr. 29 mins to Chaumont, whilst another 63 mins were neutralised between there and Belfort. De Knyff went through Chaumont at 7.37 a.m., Maurice Farman half an hour afterwards, his brother Henri a minute behind him, and then Jarrott a couple of minutes later. Edge was now picking up, and went through at 11 minutes past eight, followed by Pinson, five minutes behind. During the next three-quarters of an hour Teste, Leys, Louis Renault, Zborowsky,

RENE DE KNYFF,

Who finished first on the first day, with the phenomenal avera e of 56 miles an hour throughout.

Edmond, Baras, De Caters, Hemery, and Collins went through.

At 10 a.m. to the tick of the clock the Automobile Club's special train ran into Belfort.

It was broiling hot at Belfort, but, surfeited as we were in the vagaries of the English climate, we revelled in the sun, the pure atmosphere, the brilliant contrasts of light and shadow which we were experiencing five hundred miles from home. The roads were in good order, as one would expect them to be in France, but the dust—well, we'll never again claim for English roads a supremacy in the matter of dust! The military arrangements were very complete. Traffic on the road in from Paris was stopped at 9 o'clock, but an armlet issued by the club to journalists and officials gave their voitures ingress to the road leading to the control. This was placed about half a kilometre outside the fortifications and close to the Octroi. Infantry lined the sides of the road with the idea of keeping a clear course, but they were mainly assiduous in their duties when the crowd threatened to obscure their own view, or when a particularly superior or portly officer approached. The club had taken a house and was using it for temporary offices. Across the road was erected a triumphal arch, florally decorated, and carrying a big streamer with the words: "Hommage aux coureurs. Course, Paris-Vienne. Arrivée." On the opposite side of the road was the press bureau, where was posted the number of the arriving vehicle, with times of leaving Champigny and of arrival at Belfort. And everywhere was a vast concourse of interested spectators, whilst of cameras, verily, they rivalled the dust for ubiquity. You would be on the point of snapping an arrival for "Motor Cycling," when, with a craving for "pardon," another photographer would plant himself right in front of your lens! A curious kind of politeness that, which permits a rude action provided the word "pardon" be uttered!

A TALE OF FOUL PLAY.

Snapped at the first control on the arrival of the motor-bicycles.

Down the road are signallers and buglers stationed, and in this way the signal that a car was approaching would travel very rapidly, and nearly a minute's warning was thus given.

The First Arrival.

A bugle call at 9.37 signals the first car in the distance. Intense excitement prevails as the sound of an approaching car is heard. In it comes, No. 166, but this cannot be one of the racers. A laugh circulates through the crowd as a slow-touring vehicle dawdles through the control gate, and everybody is again on the tip-toe of expectation. Photographers have the shutters of their cameras set. Far away up the road can be discerned the long line of soldiers keeping the course clear, and on points of vantage cavalrymen are to be seen keeping a sharp look-out for signs of the first car. How well everything is arranged! What an enthusiastic welcome awaits the racers. Ten o'clock passes, and there is yet no sign of the first car. The crowd gets denser; all around are cycles, motorcycles, and cars. The bright uniforms of the officers and the dresses of the ladies, with the

René de Knyff thunders into Belfort.

beautiful landscape as a background, form a charming picture.

It is now 10.7. The bugle sounds again, and the sound of a cannon shot rings out. Here it comes, surely this is it—188 F. a Durand—but once again it is a false alarm—merely a local car.

Then, soon after 10.45, the bugle sounds three or four times as it passes along message after message. All eyes are directed down the course, and suddenly "Voilà! Voilà! oh, la! la! la! la!" and round the corner, nearly half a mile away, comes a black object, followed by a cloud of dust. It seems to sweep towards us at an incredible speed, bounding along in a manner suggestive of rapid motion overcoming obstacle after obstacle. Binoculars are directed to the object, and then the cry "Nombre cinq. René de Knyff," and the crowd takes up the cry, "De Knyff!" and then the car comes to a stop beneath the arch, and our photo was taken at that moment, just as the rush began. De Knyff was quickly shaking hands with all sorts of people, who were impelled to do so either by joy or the desire to be immortalised on the cinematograph.

Nearly twenty minutes elapse, and then the scene is repeated as Henri Farman on a Panhard rushes up. At 11.14 Maurice Farman on a Panhard, at 11.16 Jarrott on a Panhard, and then a long wait. At 11.45 Pinson on a Panhard, followed a minute later by Teste on a Panhard. Verily 'tis all Panhards. But where are the other Gordon Bennett competitors?

Where is Edge?

And Fournier, where is Fournier? Once there was a wild shriek. A man with binoculars yelled out Fournier's number, and the crowd cried "Fournier!" at the approaching car, but they were doomed to disappointment.

Poor Fournier had endured trouble after trouble with his tyres, and his gains upon De Knyff, in the early stages, were all neutralised by the stoppages to repair the damage.

L. Renault, on one of his own cars, was seventh to arrive, followed by Edmond on a Darracq. Then came Zborowsky on a Mercedes, and then Baras on a Darracq, and then came the cry "Edge!" Welcome, indeed, to the only four Englishmen at Belfort (speaking to the best of our belief). Jarrott had told us that Edge was coming along all right, but was underpowered. Edge gave us a grimy hand, and said his coil was bad. It was now a little after midday, and, from then until 8.30 at night, cars and cycles were coming in. Up to midnight 105 vehicles had reached Belfort out of the 137 which had started.

The Motorcycles.

All the motorcycles being near the tail end of the line at the start got away rather late, and the afternoon was well advanced when the first of the De Dion tricycles dashed up to the control. This had Bardeau on board, who, dusty and hot-looking, switched off his motor at 2.59, having been on the road since 5.47 in the morning. Shortly after came the famous Osmont, also on a De Dion racer. He landed at 3.12, and immediately dismounted and signed. The signalling of approaching cars was now frequent, and it was necessary for all arriving competitors to at once remount and ride off into the town. The enthusiasm on the arrival of Osmont was immense, the crowd rushing up and endeavouring to get a handshake with him. Both the De Dions were eight horse power, and strange-looking machines they seemed, with their long wheelbase and heavy-looking wheels.

It was not till close on five o'clock when the first of the motor-bicycles was signalled. At 4.56, Bucquet, on a Werner motor-cyclette, dashed up to the control, and received a great ovation. He looked the least tired and dusty of any of the motorists so far, and his mount showed no signs of the long distance it had come. He quickly signed on, mounted again, and rode away into the town.

A few minutes later—at 5.14—another motor-bicycle was signalled. This proved to be No. 141, Labitte, also on a Werner. At 5.15 he stopped at the control, signed, and rode off again.

About 5.30 the next bicycle was in sight, and this proved to be the new two-cylinder Clement, ridden by Masson. Both rider and machine looked in fine form. So far the honours lay with the Werner and Clement, and it is excellent testimony to the workmanship of the machines that they managed the distance of 250 miles at top speed, without the slightest mishap.

Graham White, who had broken the crank shaft of his Wolseley in getting to the start, turned up at Belfort at three o'clock in the morning. Under Mr. Austin's supervision a new crank shaft had been made in five hours. White told us that he had had a hard time coming through in the dark.

On arrival at Belfort the cars were taken straight into the Garages, and were there locked up,

Cyclists being employed as guides.

Nothing could be done to them until 3.20 o'clock the next morning, when the signal to start would be given to the first car. Any replenishment or replacement would then have to be done. But, from the way in which the cars came in, they seemed as if little would be necessary beyond refilling of tanks.

A few miles outside of Belfort is Delle, and, as racing is not permitted in Switzerland, the country would be crossed at a comparatively slow pace. The first car got away soon after 3.20, and then there was a lengthy procession until 7 o'clock. We even came across one in the town at 11.30. Bregenz was reached during the afternoon the distance from Belfort being 312½ kilos., or 195 miles.

S. F. Edge arrives at Belfort.

In France the roads had been good, but thereafter—well, words would almost fail to adequately describe the bumpy surfaces, the corners, the gradients, and other defects, so that the 105 cars which left Belfort became greatly reduced in number, bent axles being the chief trouble, whilst tyres were often going. That the tyres had stood so well was due to the fact that the machines were light.

Of accidents there were said to be few between Paris and Bregenz, but one was unfortunately fatal. The mechanician of one of the Gobron Brillie cars was thrown out. He was taken to Paris, and died on Friday morning. The Hon. C. S. Rolls and his man

Had a Fearfully Narrow Shave.

Whilst endeavouring to take a bend on the road it was found that the car would not steer, due obviously to slackness of the outside tyres. Instead of taking the curve the car went almost straight ahead, bounded over two gullies and back and then rebounded and dashed into a tree, felling it and passing right over it, and finally wrecking itself on a bank 40 yards away. The full details of this smash and its strange consequences are given on another page. Two men who were driving a cart at Langres (but who were in no way connected with the race) got into collision with a cart and one of them was killed. Fournier's crank shaft broke, thus putting him out of the race. One car was said to have dashed into the gate of a level crossing and to have topped the train service! Jarrott told us that the road was good, but very "cornery," twist following turn in rapid succession. W. K. Vanderbilt reached Belfort all right, but would not pursue the journey further. Neither would the other millionaire, Baron Henri de Rothschild, whose car was fitted up for first aid (the Baron is a doctor by profession).

A large number of cars were using alcohol. This consists really of one part of alcohol and one part of benzoline. The exhaust has a peculiarly sickening odour. Chevalier de Knyff won the Arenberg Cup.

Of the first 12 drivers to reach Belfort two (Edge and Jarrott) were English, two (the Farmans) were of English extraction, one was a Pole, some were Belgians, and only one was a Frenchman. This is some contribution to the question as to which nationality has the more daring and skill.

Results to Belfort Classified.

Grosses Voitures (Heavy Racing Cars).

			Time on Journey. H.	M.	S.
1	Rene de Knyff	Panhard	4	16	30
2	H. Farman	Do.	4	18	1
3	Chas. Jarrot	Do.	4	26	9
4	M. Farman	Do.	4	28	45
5	Teste	Do.	4	45	48
6	Pinson	Do.	4	50	0
7	Zborowsky	Mercedes	5	1	50
8	De Crawhez	Panhard	5	4	14
9	Giraud	C. G. V.	5	10	25
10	De Caters	Mors	6	3	18
11	Edge	Napier	6	3	28
12	Chanliau	Serpollet	6	9	14

And nineteen others.

The Belfort Control. The end of the first stage Paris-Vienna.

Voitures Légères (Light Racers).

			H.	M.	S.
1	Edmond	Darracq	4	46	58
2	Rigolly	Gobron Brillie	4	52	4
3	L. Renault	Renault	5	1	49
4	Baras	Darracq	5	3	28
5	Henery	Do.	5	10	25
6	Max	Do.	5	16	12

And thirty-six others.

*Voiturettes.**

			H.	M.	S.
1	Oury	Renault	6	19	44
2	Guillaume	Darracq	6	23	25
3	Grus	Renault	6	39	10
4	Marbais	Darracq	6	52	53

Motor-tricycles.

			H.	M.	S.
1	Bardeau	De Dion Bouton	6	17	2
2	Osmont	Do.	6	32	22
3	Lazon	Do.	7	56	30
4	Bardin	Do.	12	38	26
5	Hallex	Do.	13	47	1

Motor-safeties.

			H.	M.	S.
1	Bucquet	Werner	7	56	30
2	Podsenick	Laurin Klement	8	12	2
3	Labitte	Werner	8	21	2
4	Masson	Clement	9	48	57
5	Dermy	Do.	11	23	39
6	Kreiger	Laurin Klement	14	9	54
7	Williams	Clement	15	20	31

Average speeds en route.

	kilos.	metres.		Per hour.
De Knyff	90		equal to	56.2 miles.
Edmond	85	880	equal to	53.3 miles.
Oury	64	460	equal to	40 miles.
Bardeau	64	900	equal to	40.3 miles.
Bucquet	49	900	equal to	31 miles.

One hundred and five vehicles got away from Belfort at two minute intervals on Friday morning, leaving in the order of their arrival. De Knyff was, therefore, the leader of the string, and he easily maintained his position, arriving at Bregenz 12hrs. 20mins. after the start. The Farmans were close up.

From Bregenz racing commenced again over the stretch of 337½ kilos. (211 miles) to Salzburg. The roads were rough and in bad order. One hundred and two cars started from Bregenz, the Panhards well maintaining their position, whilst S. F. Edge had dropped back still further in the race on arrival at Salzburg. But that purely English quality—staying power—was to triumph over the last and worst stretch of 209 miles from Salzburg to Vienna. Speed over good roads and under fair conditions had given to French cars the victory so far, but, under adverse conditions, they had to give pride of place to S. F. Edge and his British Napier car. In the fearful Arlberg Pass, De Knyff, who was still an hour and threequarters ahead of Edge, had the mortification to find his car unequal to the severe trial. Edge passed him with but 30 miles to go, and reached Innsbruck, covering the distance from Paris of 387 miles in 10hrs. 41mins. 58 4-5secs., and thus won the Gordon Bennett Cup. Thus, for the first time, England gains the blue riband of motor racing. Mr. Edge and his cousin, Cecil Edge, who accompanied him on the Napier, had some thrilling experiences and narrow escapes. The car left the road at one point and ran into a river bed, whence, it is stated, it was lifted out with the aid of peasants. On this account a protest has been lodged, but in the best circles in France this attitude on the part of the losers is described as unsportsmanlike.

The last stage of the race to Vienna, over vilely bumpy and stony roads, all twists and turns, wiped out car after car. The finish was on the racecourse, and the first to arrive was Marcel Renault on a car by Renault Freres; he arrived at 2 o'clock Zborowsky, on a Daimler Mercedes, arrived next 3½ minutes afterwards, and six minutes later came Forest, on another Mercedes, who had been first into Salzburg. Then in this order arrived M. Farman, Baras, Edmond, Hemery, Berteaux, Henri Farman, etc., etc. H. Farman was placed third, Edmond fourth, and M. Farman fifth. Mr. Jarrott got through all right. The final placings will not be known for a day or two. The marvel is that so many cars survived the severe ordeal of the frightful roads (of which Englishmen can have no conception) in Switzerland and Austria. Max's car shot down a declivity and was wrecked 300 feet below the road, but fortunately the riders were thrown out early in the fall. The race was full of incidents.

NEWS.

Paris-Vienna Items.

A wonderful event fully described and illustrated entirely by our own staff.

After Belfort, the bad roads would largely prevent anything in the nature of racing.

Jarrott got a big reception, and it was noticed that he was well provided with spare tyres.

The cinematograph man was having an exceedingly busy time all day long at the control.

The driving tyres of many of the machines were so hot that they could scarcely be touched by the hand.

Many of the cars had their back tyres fitted with nail extractors; these seemed to have acted well.

Marcellin created considerable amusement by his fantastic appearance in a huge fur coat and wierd-looking head gear.

Courard, No. 61, had effected a roadside repair to his exhaust box which had broken from its brackets; it came in all tied with wire.

Rene de Knyff would have been carried shoulder high by the crowds of admirers if he had not had to move straight away from the control.

The heat in France at mid-day on Thursday was intense, and it is reported that several sunstroke cases occurred round about the control at Belfort.

Later on in the evening, stragglers in the race were coming into the town with the sound of their horns and exhausts awakening echoes among the quiet streets.

Everyone is singing the praises of the grand roads of France. In no other country probably would it be possible to drive along the roads at the speed of an express train.

Leys's car came in with a damaged water circulator pipe. Attempts had been made to repair it with some leather bound round with wire, but with only partial success.

The dust created by the motors was remarkable. In fact, some narrow shaves occurred through the drivers of passing cars not being able to see each other through the dust clouds.

De Caters's car, as soon as it dashed up to the control, began to back-fire with violent explosions, causing the crowd to scatter right and left. There was not the slightest harm done, however.

Car No. 41, driven by Wherle, created a small sensation at the control by suddenly becoming enveloped in dense clouds of smoke. Many people thought it had taken fire, but it was only due to some lubricating oil having got into the motor cylinder.

Giraud, on car No. 13, had his attention called to a large nail embedded in one of his tyres, and one of the spectators was so anxious to extract it for him that he tried to get it out with his teeth; however, a big pair of pliers had to be used with great force. The nail was over an inch long and had not punctured the air tube.

Edmund, on No. 38, was simply smothered with dust and mud.

Fabulous prices were being asked at Belfort on Thursday evening for hotel and sleeping accommodation.

Pinson and Teste, on cars Nos. 9 and 17, came into the control so close together that there was nearly a collision.

Probably not since the days of the Franco-German war has Belfort been in such a state of bustle and excitement.

Rene de Knyff won the race to Belfort, doing over seventy miles an hour in places. His average was 56 miles an hour.

The number of motorcars used by the Spanish nobility is increasing daily. The streets of Madrid show marked evidence of this. Motorcycles have become more numerous than ever.

At the beginning of July, the long distance drive for German motorcars and motorcycles will take place. The tour has been arranged by the Middle European Motorcar Association, and will go from Berlin to Hamburg, Kiel, and back to Berlin, a distance of about 500 miles. The start will be on July 4th from Berlin.

Charles Schwab, the American steel king has ordered a Daimler-Mercedes car at the Darmstadt works which must be able to maintain an average speed of 80 miles an hour.

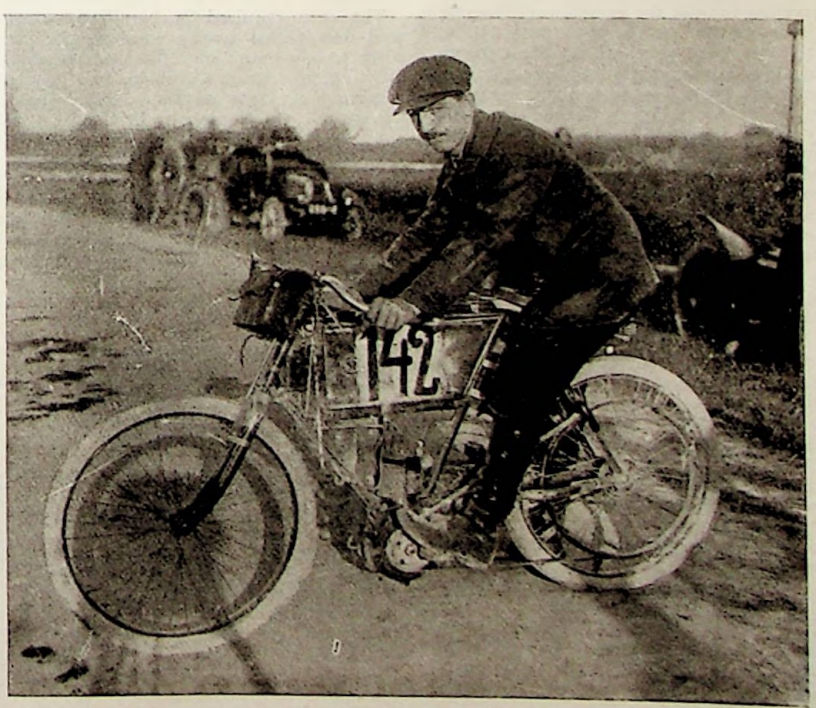
Greece is making extended use of motorcars and cycles. The Army has made extensive tests and intends to give several orders should advantageous terms and prices for specified construction be quoted.

The chief of the New York Fire Brigade is now in possession of a motorcar painted red, and it is understood that he will *not* be required to submit to any limitation of speed in proceeding to a fire.

Several Austrian officers have been trained as motor drivers to take charge of the motors used in the Army. A few motorcycles have also been employed to test their usefulness, and if the report about these is favourable, more will be ordered.

Jacquelin as Pacer.

Jacquelin, the well-known French racing man, was to have paced Contenet in a six hours' race at the new Buffalo track in Paris, but not on a common or ordinary bicycle. Failing the steam motor-bicycle which he is endeavouring to obtain from the Serpollet firm, he will content himself with one of Linton's two petrol pacing machines.



Bucquet, on the Werner motor-bicycle; first bicycle to reach Belfort. Average pace, 31 miles an hour. Distance, 253 miles.

The Liverpool Cycle and Motor Show for 1903 will be held from the 3rd to the 7th February, at the St. George's Hall, under the auspices of the Automobile Club, as last year.

The Catford Climb.

We hear that the motor-bicycle section of the Catford Hill climb is filling well, and some keen competition should result. The gradient, by the way, varies from 1 to 25 to 1 in 6. Those who do not take part in the event should ride down and pick up some wrinkles in the art of hill climbing.

The Hon. C. S. Rolls' Disaster.

We met Mr. Rolls crossing over from France, and he gave us a really thrilling account of his smash in the Paris-Vienna race, and the subsequent events. Without knowing that both the tyres on the left-hand side of the road had punctured, he attempted to take a curve without diminishing his pace, which was sixty miles an hour. As it unfortunately happened, the curve was to the right, so that the punctured tyres were to the outside. Now, on a curve, the outside tyres are the ones that grip the road, whilst the inside ones do nothing, and if the outside ones are both punctured, the machine will simply skid in the direction of the original line of motion. Rolls' car, therefore, shot across the road, and bounded over two gullies; the front wheels here got a slight grip, and the machine swerved back into the road, just shaving a big wall. Mr. Rolls thought he was all right again, and could slow down to see what was wrong, but the machine refused to steer, and the rebound carried it back up a bank full tilt into a high tree with a girth of about 2½ feet round the trunk. The branches struck the driver's face, and then the front of the car hit the tree. Had the tree held its ground the occupants must have been shot out and probably killed. As it was, the tree bent under the shock, and the car persisting in its course, the roots broke, and the tree gave way, whilst the car ran clean along its length, ploughing its way through the branches, and, after clearing them, went for a bank about 40 yards away, where it buried itself. The steering column was twisted, and the driver's seat simply pulverised. But the driver stepped down, whilst the crowd which had seen the smash rushed up and embraced him, declaring that he must be killed. As a matter of fact the mechanician was unhurt, but Mr. Rolls had twisted his hand in the steering wheel, and burst a blood vessel, for the hand was swollen to treble its size, but the skin being unbroken the blood did not escape. He enquired for a doctor, and a cyclist walked with him for a couple of miles to a village, only to find there was none there; but they found that at the next place, a few miles ahead, there were two, so the cyclist lent Rolls his machine, with which he rode, holding his injured hand away from the bars. He had only gone a little way when he came upon a knot of Mors workpeople who were waiting to see him go by, driving a big Mors car at 60 miles an hour, and instead they saw him riding a cycle, steering with one hand. What a contrast! The doctors were found to be out seeing the race, so Rolls had to turn back, and go all the way to Paris, where he had his hand treated at a hospital. He told us that he fancied it was one of the nearest things that he has had.

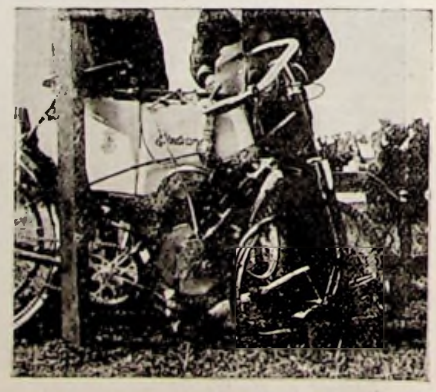
C. G. Garrard on the Clement-Garrard, on which he performed so well at Plymouth.

Alcohol Found a Success.

Werner Freres, of Paris, the makers of the well-known motorcycles bearing their name, have had great success, we hear, with their alcohol bicycle-motor. They feel sure that this kind of fuel can be employed with great advantage, and the continued trials will further reveal the progress made. Clement, a firm which has hitherto made only cars, is also going in for alcohol motorcycles, and the head of the company declared recently that such would have a great future.

Car Destroyed by Fire.

The care required in handling petrol is well exemplified by an incident that took place at Coventry on Monday last. A Mr. Whiting, of Sutton Coldfield, had been out motoring and stayed for a little time at Coventry. On leaving he lit the lamps and carelessly threw the match on to the ground. Here it ignited some petrol that had leaked out while the car had been standing, and had not been noticed by Mr. Whiting. The flame shot upward and, in less time than it takes to relate, the car caught fire and was completely destroyed. Unfortunately, too, the owner had not insured the car.



Wright's motor-bicycle, taken immediately after a smash into the railings.

A New Road.

It has been stated several times lately that the proposed road from Ostend to Roubaix was to be abandoned. The most recent news on the subject, however, is that the King of the Belgians proposes to cover the suggested route on a motor with M. Smet de Naeyer, the Minister of Finances, and a favourable decision is anticipated.

The Motor Races at Plymouth.

Nothing could have been more propitious for the inauguration of the big motorcycle race meet at Plymouth on Friday last. The weather was grand, and the track in excellent condition. Motorcycle races are a decided novelty down Plymouth way, and the Argyle A.C. are to be congratulated upon organising such a successful two days' meeting.

The chief racing visitor was M. Rigal, whose race with Wridgway at the Crystal Palace some years ago will be remembered. The

FIVE MILES SCRATCH

for motor-bicycles over 112 lbs. was run in four heats; those qualifying for the final being E. H. Arnott, J. J. Leonard, C. G. Garrard, and S. J. Watson. Arnott and Leonard were on 2 h.p. Werners; Garrard on a Clement two-cylinder 2¾ h.p., and Watson on a 2¼ h.p. Chapelle. The final was won by S. J. Watson, in 8 mins. 4⅘ secs., Leonard second and Yates third.

The five miles handicap for motor-bicycles under 112 lbs. was also run off in four heats and a final. Tessier, on a 2 h.p. Rex, finished alone in the first heat; in the second were three competitors, Westlake, 2¼ h.p. Chapelle, giving up shortly after the start. C. G. Garrard, who was giving Arnott a mile start, rode splendidly and cut down the mark considerably, but had too much to give away to win. The third heat was void, and in the fourth were J. J. Leonard, Bert Yates, 2 h.p. Humber; O. Lees, 2 h.p. Rex; Garrard, 1¾ h.p. Clement. Leonard picked up his men and beat them by a lap and a half. Time, 9 mins. 45 secs. In the final Garrard won; Arnott second, Leonard third. Time, 7 mins. 35 secs

IN TRANSIT.

Some Experiences of a Cyclist in the Transition Stage.

What will be the Weight?

Whilst it is logically sound and (on a more simple issue) conducive to the absorption of information and knowledge in a pleasurable manner to take up motor cycling at once without waiting for the ideal machine, still that in itself is no reason why we should not look ahead and try to apply the knowledge we are gaining to the machine of the future. I have heard of some who have allowed themselves to be pushed aside from the motorcycle because they have suddenly discovered, or had it pointed out to them, that the motor-bicycle has a future. It would be a sorry instrument if it hadn't, and I can quite believe that the motorcycle, in the highly simplified state in which it is supposed that it will appear to the novice, the inexpert, and the unmechanical, will have become as uninteresting as a sewing machine or a barrel organ. The motor vehicle in its present state—obviously an unfinished one, because every year sees some change in style, some refinement of method—appeals to those of a mechanical turn of mind very strongly, because this is their opportunity of familiarising themselves with the faults, their cause and cure. When the vehicle has reached its so-called perfect state there will be no opportunity to learn these things; they will be known to be possible, but will be thought improbable of happening. But when they *do* happen—well, pity the poor man who has then, at that late hour, to buy his experience.

But, as I have said, this does not prevent us looking into the future; in fact, it is obvious that the experience we are all gaining compels us to look ahead with the advantage of knowing what we are looking for. And I cannot help wondering which of the two prevailing tendencies is the right road into futurity—whether the motor-bicycle will follow the same course as did its predecessor, the bicycle, and gradually become lightened until it weighs little more than the ordinary machine, or whether it will go the other way and become a long-distance, high-powered, single-track vehicle with ambitions to be considered on an equality with the roomier car. My own opinion, given simply for what it is worth, is that the first is the proper course. The highest power that can be obtained, within the limits of a small compass and a light weight, will be utilised, and then all efforts will be directed towards a reduction of avoirdupois. For pure racing purposes, of course, any sort of freak can be developed, so that it would be futile to suggest that big powered and heavy motor cycles will die out, because they will have a certain purpose to fulfil and will do it well; but the aim of the tourist and the average rider will be to get a machine that will give him moderate pace and good hill-climbing powers and shall be easily manageable.

The Exuding Oil.

I should be glad to hear of a really efficient method of preventing the oil from lubricating or decorating the exterior of my crank case. Appearance goes a long way towards enlisting or alternating the sympathies of the "would-be" motorist; but, apart from that, there are the considerations of economy and diminution of trouble, because, if the full charge of oil can be kept in the crank-case, it is obvious that it will do its work much more efficiently and effectually than one which is able to exude much of its bulk. My own engine is not so bad, but it is at least open to improvement in the method of providing an air escape from the crank chamber. The oil comes out from there at every stroke of the engine in the form of a fine spray, and as one consequence one of my shoes is now too greasy to take a decent polish. I have placed the hole of the plug facing in all sorts of directions, but that shoe still gets greasy, whilst nothing seems to keep the oil in. I made a small cage to hold some absorbent cotton, and to be clipped by the vent plug, but the improvement was only good for a short time. I have heard that if the interior end of the vent plug be altered by the addition of a short length of tube cut like the business end of a quill pen, the nuisance can practically be ended, because the oil carried up by the air is thrown against the walls of the tube and hence runs down off the "pen-point" and does not choke the orifice of the tube. If this or any other simple method will work, I should be very glad to hear from readers who have had some experience with such a device.

A Spot to be Avoided.

Recently I chanced to mention that, on the two occasions when the pedalling home of a motor has been necessitated, the trouble has occurred at the same spot. I am commencing to regard this place with a certain amount of distaste and fear, and I would avoid it if I could. It is a little less than two miles from home, at the foot of the hill in a quiet suburb. I had my first failure there with a tricycle a couple of years ago; it arose through faulty ignition, followed by bad adjustment of the points of the plug. Then, early this year, on the second ride on the motor-bicycle, the accumulator finally "petered out," and both of these occurrences compelled me to pedal home—and up that hill, too! But the bicycle came up easily—far more easily, in fact, than one would expect a vehicle weighing a hundredweight to do. A few weeks ago I was just passing the same place on my way home when the motor began to miss, and finally quitted work. This proved to be due to the fracture of the accumulator bridge. Last week end I had piloted a friend over a favourite stretch of country, and we were returning home. As we were rounding the corner of what marked the junction of my two fatal roads I was in the act of telling him that nearly all of my mishaps had occurred just thereabouts, when his motor suddenly ceased to work! The coincidence was somewhat remarkable: moreover, it was aggravating, because it was then the lunch hour and we were as hungry as a pair of tramps. My friend guessed the stoppage to be due to one of two causes—either the contact points in the commutator had got dirty, or the spray carburetter had choked. He looked to both, and we were running again in five minutes. CYCLOMOT.

CARE OF THE ELECTRICAL IGNITION PARTS ON MOTORCYCLES.

By G. C. WESTON, M.I.M.E.

ACCUMULATORS: CHARGING AND KEEPING IN ORDER.

We will, in the first place, consider the source of the current on the machine, viz., the accumulators in which the energy is stored.

To keep these in proper working order they should always be charged up whenever possible. Never let them run right out and then keep them standing before having them charged.

Should one have the electric light from a direct current supply in the house, it is an easy matter to charge them up, all that is necessary being to remove the cover from one of the switches and connect two wires, one from each of the terminals of the cells, to the two contacts on the switch. It must be carefully understood, however, that the correct poles must be found before doing this; that is to say, a positive terminal on the switch must be connected to a positive terminal on the accumulator, and a negative to a negative. It will be found on the cells that the positive terminal is always marked with a plus sign, thus+, and the negative by a minus sign, thus−. On the switch you will have to find them out in the following manner:—Connect two wires, one to each terminal on the switch, and, having bared the other ends, dip them into a glass of water, keeping them about half-an-inch apart. A stream of bubbles will arise from the end of one wire. This indicates that this wire is connected to the negative terminal of the switch; carefully trace it back, and with a pen and ink put the mark—on the brasswork to which it is connected, and on the terminal to which the other wire is joined make a + sign.

Care must be exercised to see that these are

Marked Correctly,

for if coupled up the wrong way the cells will be injured and lose their capacity. The marks you have made, being under the cover, will remain and serve to indicate the connections to be made for future charging. The switch button or handle must be left in the "off" position all this while, as the wires and cells take its place, and if all is in order the lamp in the fitting will light up as soon as you complete the last connection.

Now a word as to the fitting you select for this purpose, that is to say, the lamp or lamps controlled by the switch. All cells have a special rate of current at which they should be charged, and this rate, of course, varies with the capacity of the cell. Excepting when in the manufacturer's hands, rather rough and ready means are taken to ascertain this current, but to be on the safe side it may be taken that they should be charged at a low rather than a high rate. It only means that a longer time will be required to give them the full charge, and one runs no risk of injuring the plates.

Bearing this in mind, select a fitting with one 16 candle power lamp if the accumulator be of a very small size; if larger, select one with two or three 16 candle power lamps. There are several points that govern this which need not be discussed here, but if the above directions are carried out no harm will ensue.

We have rather amplified upon charging one's own cells, as in these days a large number of people have, or are in a position to obtain, the use of a switch that can be used for this purpose, and the cell can be put on at any time when the light is required to be used, the fact of a small accumulator being in series with it making practically no difference in the light.

The cells can be left in circuit until they have to be removed or are fully charged, a condition which is generally indicated by the acid solution fizzing and bubbling at a good rate. The best test to ascertain if they are fully charged is to connect a voltmeter across the terminals, which should read 2½ volts per cell, and as the generality of accumulators used on motorcycle work consist of two cells, the voltmeter should read about 5 volts.

Whilst the cells are charging, remove the small ebonite plugs so as to allow a free vent for the gas that is evolved. Before connecting up, look down each of these holes and see that the liquid covers the top of the plates; if not, fill it up with water until it does so, and always keep it filled up afterwards. Only use water for this purpose, unless the cells have been upset and a quantity of the liquid finds its way out, in which case it will be best to have it filled up at the manufacturers with the proper strength acid solution.

A difficulty will probably be found in getting water into the cells, owing to the aperture provided being very small. A good way to do this is to roll up a little funnel of paper and place it loosely in the hole, and let the water gradually trickle in down the side of the funnel, permitting the air to escape by lifting it up and down.

Always make it a point of wiping off all moisture that accumulates on the top and sides of the case after charging. This acid spray will attack any metal it adheres to, and cause corrosion and formation of salts. Clean every part of the case and terminals, using a damp rag for this purpose, and rub quite dry before replacing it in its case on the machine. Should there be any corrosion on the terminals or the ends of the wires, carefully wash every trace of it away, and thoroughly clean them up.

The Coil.

This calls for no special mention, for if properly treated it should not be the cause of any trouble. If any break occurs in the winding it is hopeless to try and repair it without one has a thorough knowledge of its manufacture. The only point that requires attention on this apparatus is to see that the terminals are kept quite clean on the faces where the wires are clamped, and that they are tightly screwed up; also that no dirt or dust accumulates on the surface of the insulating cover between one terminal and another. It will be found a good plan after seeing the terminals and ends of the wires are quite clean and tightly screwed up to wrap closely round them a few layers of rubber tape. This prevents them from getting dirty, and also tends to stop them from shaking loose as they might do in course of time, owing to the vibration.

How to Adjust the Trembler.

If a trembler in the sparking advance is used, attention must be given to its adjustment, so that it forms, as its name implies, a trembler. To set this, the cam must be turned round so that the slot allows the trembler to vibrate freely. Now adjust the platinum pointed screw, carefully lifting up the trembler to the same distance that it is lifted by the cam when revolving, and then let it escape from your finger and strike the screw, from which it should rebound again and again, creating a buzzing sound. Vary the distance by giving the screw a half-turn in or out until you reach a point where the vibration appears to be most prolonged, then screw up the clamping screw tightly. It is as well to do this with the current on, as you can then form a better idea by viewing the spark that is formed at each break between the trembler and the screw.

Before adjusting the trembler, see that the whole thing is free from oil, which always finds its way along the shaft into the interior. Remove any black deposits from the platinum contacts on the screw and trembler by touching them with a piece of very fine emery cloth. Do not rub too hard, as the thickness of the platinum generally is not great, and may soon be all worn off.

A similar treatment should be given to the points of the sparking-plug from time to time, exercising care not to bend them whilst so doing.

See that the interrupter-plug fits tightly and snugly in its socket, and keep its stem clean with fine emery; if too slack a fit, it is liable to make bad contact, and may be shaken out; if very loose, gently tap the plate on the socket closer in.

OTHER PEOPLE'S VIEWS.

Side-slip.

SIR,—I read with interest your article on "Wheelbase and Side-slip," and undoubtedly they both offer a really involved problem. Theoretically speaking, if the weights be not symmetrically disposed on each side of a plane bisecting, and perpendicular to both hubs of the motor-bicycle, then when the brake is applied to the front wheel forces will come into play which will cause the back wheel to turn about the front wheel, unless there be sufficient friction between road and tyre to prevent this.

But if, on the other hand, the machine is perfectly symmetrical, then the only result the application of front brake will have is to produce stress in the frame of the machine itself. It is no doubt in steering that side-slip most often occurs, for directly the machine is made to describe a curve, no matter how slight, it will leave the plane perpendicular to the road, to compensate for centrifrugal force, and then a small component of the pressure of the wheels on the road will cause skidding.

The moral, of course, is to ride as steadily as possible, which indeed is rendered easier on a motor-bicycle than on an ordinary machine, for it is difficult to cause the fly wheel, when rapidly turning, to alter its plane of revolution. But even then my experience has shown me that on a wet asphalt road side-slip may occur, but only when the motor has been driving, and never whilst I stopped the machine with the front brake.—Yours faithfully, CYRIL R. MERTON.

Berlin.

The Holden Bicycle.

Sir,—I see a wish expressed by some of your correspondents for practical information on various types of motor-bicycles. I notice that very little has so far appeared in your columns concerning the Holden bicycle. The reason for this is very probably that only a few of these machines are yet on the road, mine—delivered a fortnight ago—being the eighth turned out. Against the advice of many of my motoring friends I decided on the above machine, and, so far, have no reason to regret my choice. I propose to give in your columns my experience as a novice with it. Although there can be no doubt of the value of the technical advice tendered by experts, I think what most of your readers require is the experience of those who have had no previous knowledge of motors, for what a mere novice can do with a machine others may expect to equal if not better. I may say that once I decided on the type of machine I took the greatest interest in its manufacture, and here the Holden has a great advantage in that it is entirely built in London. Mr. Parsons, who is primarily responsible for its construction, proved himself very patient in affording me every facility for watching the construction of the machine. What struck me most in these preliminary lessons was the extreme care devoted to every part, and the entire absence of what I might call flimsiness. I saw my engine tried on the brake before it was fitted into the machine, and was pleased to note that it reached 3¼ b.h.p., for, in spite of contrary opinions, I believe in plenty of power. After a short lesson in Battersea Park, in control and mixture finding, I found myself quite capable of riding my new mount through moderate traffic, and on my third trial rode four miles across London on a week-day to show my Holden to a cousin of mine who has ridden a front-driven Werner with great success for the past eighteen months.

An intending purchaser of the Holden might think it a difficult machine to mount and start on. This is by no means the case. Owing to the four cylinders, compression is always going on, and, as a rule, it is only necessary to walk by the side of the machine for three or four steps, and, as soon as the first impulse is felt, to mount into the saddle as off the pedal of an ordinary free-wheel bicycle. This operation is a great deal easier in practice than it appears on paper. The great point is to start with as weak explosions as possible so as to avoid too sudden a jar to the back tyre. Should the editor allow me, I will give, in a future issue, an account of my first extended trip to Marlow and back from South Kensington.—Yours faithfully,

"DIRECT DRIVE."

Warm Air for Carburetter.

Sir,—We observe in your issue of June 18th a letter signed "E.A.P." referring to the practice of using warm air for carburetter in the F.N. bicycle. The writer of this letter doubts the advisability of this practice, but we would venture to point out that the use either of warm air or of application of heat to the petrol is not only common but necessary practice in connection with all petrol engines.

Were cold air used, the carburetter might become choked with ice and vaporisation of the petrol rendered difficult, although carburetter in this case is in proximity to the motor.

Your correspondent's remarks with regard to the possibility of drawing in as cold a mixture as possible are perfectly correct, but there is a limit to this as described, and the slight heat taken from the engine in the F.N. bicycle is only intended to supply that given up by the petrol in vaporisation.

What happens after the inlet valve closes is really another matter, as, presuming there is no leak, it is simply a question of getting the best compression of the contents drawn in.

Finally, we have a number of testimonials from satisfied users of F.N. bicycles, showing clearly that the arrangement as turned out by this well-known firm—the Fabrique Nationale Co., Belgium—is most satisfactory in use.

Yours faithfully,

For the MOTOR TRACTION CO., LD.,
HARRY PARSONS.

The Strickland Motor-bicycle.

Sir,—I should be glad to know the number of the English patent taken out on the "Strickland Motor-bicycle" as described and illustrated in your issue of the 4th June, and if it has been published officially.

Do you not think this bicycle would be better with a free engine? I think the chains would in time have a bad effect on the engine.

I might take this opportunity of congratulating you upon "MOTOR CYCLING," which is a most excellent paper in every way. S. H. FELL.

[We could not say whether an English patent has been taken out for the Strickland. As far as we know it was taken out in France. You will observe from the sketch that a spring gear wheel is fitted for relieving the strain on driving chains.—ED.]

OUR INFORMATION BUREAU.

A large number of replies have been dealt with through the post. Information on all subjects pertaining to Motors, Motorcycles, and Motoring generally will be given to readers who seek such information or advice. Any reader who desires to ask a question with a view of ascertaining the views of other riders based upon actual experience should send his query, which will be inserted, and replies to such questions will duly appear, if of general interest; if not, a reply will be sent by post; a stamp, therefore, must always be enclosed.

"Blob" (Erith) wants to purchase a good quad. We advise the Royal Enfield.

W.P. (Havant).—Of the two machines you mention, we can recommend you to go in for the Humber.

A. Smith, 195, High Road, Kilburn, N.W., wishes to hear from anyone who has had practical experience with the Dupont two-speed gear.

If T.B. (Hurstpierpoint), who sent query re invalid's tricycle, will forward his address we can send him on a letter on the subject from a correspondent.

F.R.L.C. (Callington).—The Central Motor Co., Tottenham Street, Tottenham Court Road, London, W., let out motorcycles on hire. We do not know of any local firms.

"Heigham" (East Ham).—Of the two machines you mention, we only know the Phœnix from actual experience to be a fast and reliable machine. The other make is not well known to us.

"Canoe" (Greenwich, S.E.) wishes to be informed what speed he might expect from a Canadian canoe driven by a 1 h.p. motor. About seven to eight miles an hour if the motor is working at its best.

J.H. Warlow (Rotherham).—We do not know of any one who makes a speciality of adapting chain-driving and two-speed gears to an existing motor. You might try, however, Calvert, Woodville Road, Mildmay, N.

H.S.M. would be obliged for some of our readers' experiences with the Holden motor-bicycle. He wishes to know more particularly if dust is liable to get into the cylinders, and if it is a good non-slipper and quite reliable in general.

Chamber Over-Heating.

"Constant Reader" (Shalden).—We should say that the crank chamber of a two-cylinder motor getting almost red-hot after 15 miles running is an unheard-of occurrence. If your lubrication is not perfect, the crank and main bearings may get very hot. The best battery for charging accumulators is the "Fuller," described in No. 2 "MOTOR CYCLING." You require 6 volts to charge.

Concerning a Special Form of Motor-Tricycle.

In a recent issue we published a letter from a correspondent who was inquiring about a special—and, as it seems to us, a rather odd—kind of vehicle. In a letter to hand we have particulars of something approaching this form of tricycle. If the inquirer will put himself into communication with Geo. Freestone, South Road, Saffron Walden, he will get full particulars.

L.F.—We are inclined to the view that a trailer is distinctly safer than using tow lines and connecting rods. We have an article on the subject under consideration.

J.G.T. (Hirwain, Glam.).—Taking into consideration all your requirements, we do not think you could do better than invest in a Quadrant 2 h.p. single lever or a Phœnix 2 h.p.

A.H.C. (Honiton, Devon).—You will require a machine with a low-built frame, and we have every confidence in recommending the Werner. You would have no difficulty in attaching a trailer to it.

Licenses.

Yes, you are liable to be taxed. The Excise officials say it is not possible to draw the line between motors used for pleasure and business.

COOLING.

Motorcyclist: "I say, Robert, send me up some claret cup, and—er—put my engine on ice."