

THE AUTOCAR

A Journal published in the interests of the mechanically propelled road carriage.
EDITED BY H. WALTER STANER.

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THE AUTOCAR.

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Notes.

Autocars for Medical Men.

In October, 1899 we published an issue of *The Autocar* which was largely devoted to the advantages of the motor car for medical practitioners. At that time there was scarcely a score of medical men in the British Isles who owned motor vehicles, and about a dozen of them were good enough to give their experiences for the benefit of their professional brethren. These experiences were narrated in full in our pages, and had a remarkable effect upon the spread of automobilism. The evidence given by the few doctors who then owned cars was sufficiently conclusive to induce many others to take to the automobile.

There are now many hundreds of medical motorists whose names we have upon our lists; but, at the same time, there are some thousands of doctors who have not yet taken to the motor car. We have found from enquiries we have recently received that there is a large number of doctors who are almost convinced of the benefit of the automobile, and who now require

very little argument to lead them to decide to give up horses and take to motor cars. We have, therefore, decided to publish a second issue of *The Autocar* devoted largely to the subject of motoring for medical men. The evidence we print to-day will, we think, be sufficient to convince all who may be hesitating on the brink of automobilism to take the plunge.

The bulk of medical testimony in favour of automobilism is so large that we have not found it possible to publish more than a tithe of that which is available. The information we give, although contributed by doctors for doctors is very interesting to all automobilists, and there are many practical points brought out which are most useful, as there is no section of the automobile world which is more competent than the medical. In fact, as we say elsewhere, it would appear that the doctor, by reason of his training, is remarkably quick in understanding mechanisms other than those of the human frame, though he may previously have given no attention whatever to engineering subjects.

As an instance of the thoroughness with which doctors have gone into the subject we may direct special attention to one of the communications which appears in our pages to-day. One of our medical contributors had been impressed with the idea that tyres were the things which were likely to give him trouble. He appears to have collected all available information on the subject, and the treatment he applied to his tyres was so satisfactory that, although they were by no means of the most reliable character, he got them into such trim that they did not require a moment's attention for six months; in short, there are many useful "Hints and Tips" contributed by our medical readers. We should add that so much space is occupied by the subject of medical motoring to-day that several of the usual features of the paper are unavoidably crowded out.

11. British Gordon-Bennett Cars.

Last week we expressed our dissatisfaction with the decision of the judges who selected the British champion cars for the Gordon-Bennett race. The subject is a burning one in automobile circles, and as we wish to do full justice to it, it may be well to explain further why we commented somewhat severely upon the hastiness of the judges' decision, which was given within two or three hours of the accident to Earp's car. It was announced before the trials that the cars would not be finally selected till the Racing Committee had returned to London, and if the decision had been held over till then, there is, as we said last week, little doubt that it would have been different. A good many things which the judges did not know, and could not know in the Isle of Man, have since come to light, and it appears to us that, with the knowledge now available their decision would have been somewhat as follows: Edge and his car would have been selected, and he would have had the option of using the six-cylinder vehicle, which has been built for the race itself, though

this was regarded as altogether too powerful a vehicle for so small and winding a course as that available in the Isle of Man. The second fastest Napier would have been chosen as the second machine to be replaced if desired by the car which Edge used in the Isle of Man, or by Mr. Mayhew's racer, if he would lend it. The driver would probably have been Earp, as he appears to have completely recovered. The trio would have been completed by a Wolseley. Going by its performances in the Isle of Man this would have been Girling's Wolseley, but here again the makers should have had the option of using either of the cars driven by Jarrott or Campbell Muir. Both of these have larger engines and should be faster machines than Girling's, but owing to the fact that this latter machine is one of last year's, and is much more thoroughly tuned up, it proved to be the better car in the Isle of Man. If the makers felt confident that the larger machines would be got into racing trim in time for the Gordon-Bennett, they should have had the option of using one of them, with Jarrott at the helm. Jarrott's great racing experience should not be lost to us, as there is no question that these two later machines will eventually be found to be faster and better cars than Girling's, the only point of doubt being whether they will reach this stage of efficiency in time for the race. It may be urged by some that we are suggesting undue latitude for the competitors, but we cannot see this, as the participating manufacturers, the Automobile Club, and the British automobile world in general have one aim, and that is for the fastest cars to be used. Therefore, we can see no objection to leaving the matter to the judgment of the most interested parties, not only the most interested, but the most experienced, as it will be conceded at once that the two British firms who have devoted the greatest attention to racing must necessarily know more about it than the most able of selecting judges, sound engineers though they may be.

The Chances in the Race.

Judging by the trials results England does not stand much chance in the Gordon-Bennett race this year. The fastest car in the Isle of Man was Edge's Napier, which to all intents and purposes was a sister machine to Mayhew's, and this, though it did extremely well at Nice, and beat all cars with the exception of the two Gobron-Brilliés for speed, and did fairly well in the hill climb, was completely out-classed by the two French cars. These in their turn made no sort of showing in the French eliminating trials last week, therefore, unless something faster can be built, the Napiers have a poor chance in Germany. Continuing this line of reasoning, it is equally plain that neither of the Wolseleys stands a chance, as both were slower than the slower of the two Napiers. It should be clearly understood that in making these comparisons between the racing cars, as shown by their performances in the Isle of Man and elsewhere, we cast no reflection whatever upon the ordinary touring vehicles turned out by the two makers. Racing cars are a separate breed, and will be so long as the present rules remain in force, and that is one reason why it is desirable that the rules should be altered. On the other hand, it is no good whatever shutting our eyes to facts; we must have the fastest and most reliable machines in the race to stand any chance. The question of tyres should also be very carefully considered, for while speed is most important, too much can be sacrificed to it, and there seems no doubt that some of the tyres used in

the Isle of Man were not strong enough for the tremendous strain they were called upon to bear. It is, unfortunately, impossible to make a puncture-proof racing tyre, but we think the results prove pretty conclusively that, in the effort to obtain the fastest of fast tyres too much was sacrificed. The performance of Earp's set of roadster tyres may be taken as a proof of this, but one example is not proof, as punctures must necessarily be largely a matter of luck, and Stocks, who used racing tyres, also got through without a stop, though it is really wonderful that anyone should have done it, as the Isle of Man roads seemed to have more nails upon them than any we have seen outside a manufacturing centre. It is of little use to have fast cars and reliable cars if the tyres are not also reliable and fast, and it is easy to sacrifice too much to speed in the tyres as well as in the car.

The English and French Eliminating Trials.

The results of the French trials are interesting in many ways. Perhaps the most instructive comparison at the moment is the fact that, although only eleven machines were started in the Isle of Man, six of them finished in good time. In France twenty-nine started, but only ten finished; that is, more than half the machines got through in the Isle of Man, but only a third in France. This may be taken to prove that England's chances are more rosy than some imagine, but we think when looked at impartially from all sides it must be concluded that the comparison is interesting rather than instructive so far as it affords any guide to the possibilities in the race itself. On the other hand, the results of our own eliminating trials, and still more those of the French, show very conclusively that the racing car is not only a monster, but a very far from reliable monster; at any rate, at racing speeds. This will be admitted at once when it is remembered how many of the vehicles were unable to finish the course, and these failures are more or less instructive, but there is no doubt there would be fewer failures if lower powered vehicles were used. Not only so, but everyone would carry with it some valuable experience, as the machine would be, except so far as the body was concerned, more or less of the standard touring type. Consequently, anything which went wrong with the racer would carry its lesson for the roadster, and it would not merely be dismissed as due to extreme cutting of the weight, or the attempt to cram 100 h.p. into a design which after all should not have had more than eighty. The one thing in favour of this perpetual attempt to devise machines which shall do the impossible is that the sporting interest is intensified, as the chances of failure are so great that luck is after all the beginning and end of the affair. Luck will not make a bad machine into a good one, but it will turn an equal contest into a run away win for the car which secures fortune's smile.

Second-hand Cars.

Three weeks since we outlined a scheme which we had worked out whereby it would be possible to make it safe for the amateur to purchase second-hand cars. The necessary arrangements for the proper working of this scheme are nearly complete, and we hope in a week or two to announce that the organisation is at the service of all prospective purchasers. Expert examiners have already been appointed to prepare reports on cars in different parts of the country.

USEFUL HINTS AND TIPS.

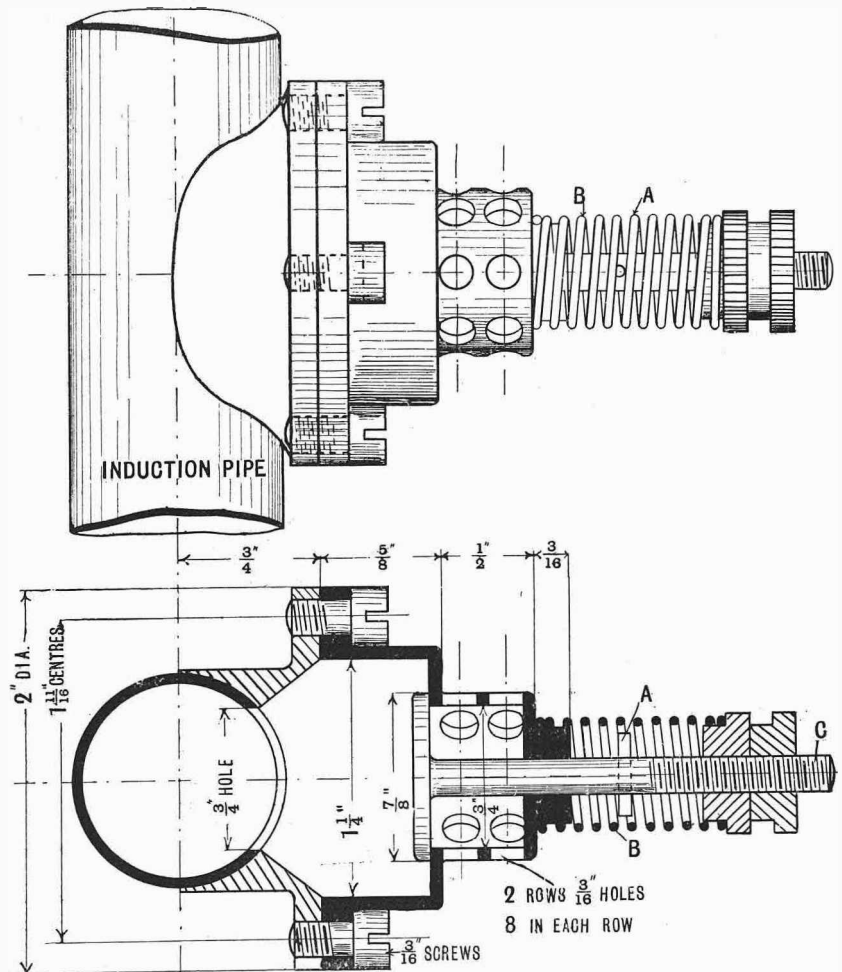
How to Make an Extra Air Valve.

Some time ago—to be correct, in *The Autocar* of January 17th, 1903—we gave an illustration of an additional air inlet valve, the particulars of which were supplied by a correspondent. This was, to the

best of our knowledge, the first instance in which such a valve was used for the purpose of correcting the mixture passed to the cylinder when the engine is running at high speeds. Shortly after the publication of this description the device was tried upon many cars, both by private owners and makers, with satisfactory results. Since that time we have been continually receiving requests for particulars of an additional air valve, and in order to show a good type we have prepared a set of working drawings which are now reproduced, upon which the principal dimensions are given. The particular device illustrated is suitable for attaching to an induction pipe $1\frac{1}{2}$ in. in diameter, but the same drawings may be made use of with additions to or deductions from the dimensions given, so as to make the valve adaptable to any size of engine. The design has been made of the simplest possible form; indeed, the chief object in drafting it was to make it so simple that the description and diagram together might be taken to any small engineer, who from them would be able to construct a valve suitable for fitting to any given size of induction pipe.

The working drawing herewith is reproduced full size, so that any parts the dimensions of which are not given can be scaled direct from the reproduction. The semi-circular portion of metal which embraces the induction pipe must be fluted out to suit whatever size of induction pipe is used. The pipe is drilled with a $\frac{3}{4}$ in. or other suitably-sized hole at some suitable point between the gas outlet of the carburetter and the connection to the induction valve of the engine. The whole of this apparatus can be made, if desired, without expensive patterns, provided that a circular piece of brass or gun-metal of a minimum diameter of 3 in. is employed. The excess of metal can be machined off to the sizes required. In case castings are prepared, the pattern is an exceedingly simple one to make, and no core boxes will be required. The inside of the parts can be cast out absolutely to size, so that machining only will be required at the valve seating and the whole of the valve stem, together with the drilled holes for the air inlet. The part fixed on to the inlet tube is shown in section, and can be riveted to it if desired, and a gas-tight fit can be made by sweating round with soft solder. Set-screws as shown and a paper washer make a tight joint between the valve body and the

pipe saddle. The small valve can either be of gun-metal or cut off a mild steel bar, as also the two knurled nuts employed for varying the tension on the spring.



Detail drawings for an automatic extra air valve. These reproductions are actual sizes for a valve suitable for a $1\frac{1}{2}$ in. induction pipe. A, taper cotter pin to prevent the valve opening too far. B, spring made of twelve turns of 20 gauge spring wire. C, valve stem, $\frac{3}{16}$ in., thirty-two threads per inch.

In the place of these knurled nuts, ordinary hexagon nuts can be used, but a washer will then have to be used against the spring, and also two spanners employed for locking up when the adjustment is satisfactory. For different sizes of engine, some trials will have to be made to get the correct adjustment of the spring, and possibly for some types a lighter or stronger spring may have to be used, but the size of the extra air valve will be suitable for a wide range of power. The inside dimensions of the metal body are given, and the thickness of the metal on the body need not be more than $\frac{1}{16}$ in., and the flanges 5-32 in. thick. Care must be taken to make the valve work quite freely so that it cannot stick, and the small stop A must be fitted so that the lift of the valve cannot exceed $\frac{1}{4}$ in., otherwise there will be a tendency to pull it up to the hole, and so cut off the extra air. The valve should preferably have a fine thread, so that a very accurate adjustment can be made.

MOTOR CARS FOR MEDICAL MEN.

The Experiences of Many Motoring Practitioners.

THE LETTERS WE PUBLISH IN THE FOLLOWING PAGES HAVE BEEN CONTRIBUTED BY MEDICAL PRACTITIONERS WHO, AT OUR REQUEST, HAVE BEEN GOOD ENOUGH TO SUMMARISE, FOR THE BENEFIT OF THEIR NON-MOTORING BRETHREN AND OF EACH OTHER, THEIR EXPERIENCES WITH AUTOCARS. THESE LETTERS, ALTHOUGH ONLY A SMALL PORTION OF THOSE AVAILABLE, HAVE BEEN SELECTED AS DEALING WITH THE SUBJECTS UPON WHICH MEDICAL MEN MOST REQUIRE INFORMATION.

BEFORE proceeding to print the experiences of members of the medical profession who have used and are using autocars, we want to express our high sense of appreciation of their courtesy in furnishing us with the evidence necessary to convince the non-motoring members of the medical world of the advantages of the automobile. It should be clearly understood that none of the letters we publish are to be regarded in the nature of testimonials for any particular make of motor car. The writers have merely given their experiences for the benefit of their professional brethren, and we thank them publicly, as we have done individually, for their disinterested efforts to assist us in spreading the knowledge of the value of the automobile to the medical practitioner. The various points of this important subject are so ably covered in all their bearings by the letters we publish that there is no necessity for us to say a great deal. Under the heading of cost it will be noted that it may be taken that this is broadly one-quarter that of keeping horses and horse carriages. At the same time, from various causes the comparison is not always so favourable to the motor vehicle; but, even in these instances, which are quite a negligible quantity, it will be noticed that there is no idea of returning to what can only now be regarded as an out of date method of locomotion. It is fully recognised that, although, as a matter of fact, the motor car is much cheaper than horseflesh, yet many of the advantages of the motor car are not to be reckoned in pounds, shillings, and pence.

Leisure and Pleasure.

The doctor's life is a very hard one—only those in the profession can fully realise how hard—and we think it is a most important point in favour of the motor, and one which can hardly be brought out too strongly, that it is so much pleasanter to drive a motor car than a horse vehicle. Not only does this mean that the daily round becomes a pleasure rather than a monotony, but the motor enables the hard-worked practitioner to obtain many precious hours of rest and recreation which he would not otherwise enjoy. Moreover, by the aid of the motor he is able to lead a much more regular life, and, as is pointed out by more than one correspondent, it becomes possible for him to take his meals with something approaching regularity. Many a doctor—and a doctor is only human—is knocked up at times of epidemics simply because he has found it impossible by the aid of the horse to cover his round in reasonable time and it has resulted in his meals being almost entirely neglected, and his daily routine being entirely upset. He gets run down, and in many instances himself becomes a victim to the malady he has worked so hard and with such self-denying courage to cure in others. If he had been able to compass his work a little more easily he would have retained his strength, and would consequently have warded off the attacks of the disease. This is an in-

disputable fact, but it is also one of the advantages of the autocar which is not fully realised.

Then again, it will be conceded without dispute that as motor driving is pleasanter than horse-driving it must be more beneficial; one who has to do so much driving as a doctor, driving should be of as pleasant a character as possible. The saving of time is enormous, and here again we find all motoring medical men in agreement. There is one matter which is not referred to, and could hardly be referred to by members of the profession, but we do not think we shall be misunderstood when we say that a smart motor turnout is found in most districts to be a distinct advantage to its possessor from a professional point of view. We have had a number of instances of this, but for reasons which do not require explanation we are not at liberty to publish them, though we may be quite in order in mentioning the fact.

The motor, so far as first cost is concerned, does not always compare favourably with the horse, and this must necessarily raise difficulties in many quarters; but the first cost is, if not the last, at any rate, the only one needing serious consideration. It is unwise to buy what, for want of a better term, is known as the cheap car. A doctor's work is so exacting that only thoroughly sound machines can stand it. Given a sound car and intelligent attention there is no difficulty worthy the name. The attention required is very slight, but it must be given regularly. It is shown clearly by the testimony we publish that in the vast majority of cases there is no need whatever for expert, and consequently expensive, assistance. In the vast majority of instances the groom or gardener who was kept in the days of the horse has been found quite satisfactory for the motor.

The Simplicity of the Motor.

We must say we have been struck by the remarkable aptitude of medical men who have had no previous experience with mechanical matters in quickly grasping the principles of a motor and the functions of its parts. When consideration is given to the matter this is really not remarkable, for after all those who are acquainted with that most wonderful of all mechanisms—the human body—have little trouble in mastering the simplicities of the engine and mechanism of a motor car, for as one professional man says, the motor car is after all a much easier thing to understand than the horse. The doctor is one who has trained himself to trace cause to effect, and there is no question that among automobilists none are smarter in diagnosing a motor ailment than a medical motorist.

Another of the strong points of the motor which has not been brought out as prominently as it might have been is the fact that it is not altogether healthy to sit for hours day after day behind a quadruped, and every one who has had much to do with horses knows that many a cold or other ailment is caught from this

cause. The healthfulness of the motor car and its value as a curative agent in certain stages of many diseases is dealt with elsewhere, and we think it is worthy of the most careful attention of every apostle of health, and many a doctor has himself benefited immensely since he took to the automobile.

We know that there are some hundreds of medical men at the present time who have almost decided to become automobilists, and we think they will hesitate no longer when they have carefully considered the testimony which our medical contributors have kindly placed at our and their service.

We know that to many of them the difficulty of selecting a suitable car is a very real one, and it will be a very great pleasure to us to advise in confidence any intending motorists who will lay their requirements before us, giving some idea of the distance they cover per day, what is the character of the district in which their practice mainly lies, and last, but not least, the sum they are prepared to spend upon the car. In certain instances it is advisable to purchase a second-hand car, and we have evolved a system, about which more will be said in a subsequent number, which will enable the purchaser of a second-hand vehicle to

THE PRACTICAL EXPERIENCES OF MEDICAL MEN.

A Review of Advantages.

Motoring, being the quickest and most pleasant form of travelling on our country roads, and particularly suited to the requirements of doctors, it only needs to be thoroughly known and better understood to be more appreciated and universally used.

Most users of our highways and byways, and particularly medical men, who drive in all weathers, at all times, and all seasons, have to consider the most expeditious and best means of covering the ground. Although motoring has occupied a share of their attention, relatively few have so far embraced it. The reason, I take it, is the erroneous impression of breakdowns. Troubles or accidents largely gathered from exaggerated accounts in our daily newspapers act as a deterrent, and as soon as the idea of a motor is approached, the vision of being stranded in a lonely place in the middle of the night, or lying on the back under the car in the mud, quickly dispels it, and leaves the contemplator following the slow, less reliable, and less safe mode of conveyance.

When contemplating purchasing a motor car these misgivings take in most people one of these forms, judging from the questions generally asked—viz.,

Motor Cars for Medical Men.
proceed without fear of being cheated. It is far better to buy a really sound second-hand car than to purchase an inferior new one at the same price.

In once again tendering our thanks to the members of the profession who have so willingly helped us by giving us the information that the non-motoring members of their profession require, we should like also to express our extreme regret at being unable to print all the letters we have received. We have endeavoured as far as possible to select those which bring out the most vital points, and we must ask those whose letters are not published to accept our best thanks for their contributions and our extreme regrets that considerations of space alone forbid their publication. In no instance has any letter been withheld which has dealt unfavourably with the motor, for the simple reason that with one exception no note of dissatisfaction has come to hand. In this particular instance the disappointment arose from the selection of an unsuitable car, and the writer—whose practice is a metropolitan one—although he has for the time reverted to horses, apparently still has an open mind, and we should not wonder if he does not soon return to the horseless carriage.

"Shall I be able to manage a car without an engineer?" "How long will a car last?" "Does it take much looking after?" "Is it cheaper than horses?" "Will my coachman be able to attend to it?" "Is the cost of running and repairs heavy?" "How long will the tyres last?" All these and similar questions can, I think, be satisfactorily answered; but, of course, much depends upon the reliability of the car purchased, and consideration, with intelligent care, in the handling of it.

The advantage to a medical man—and particularly a country practitioner who has long distances to cover, and who is frequently working hurriedly—is the great saving of time. In an emergency, instead of finding the coachman waiting a quarter of an hour or twenty minutes to harness a horse, the motor can be away without further assistance in two minutes; instead of travelling at an average of eight or nine miles an hour with horses, the motor will take you eighteen or twenty miles an hour with ease; instead of breaking a round of patients distantly situated into two or three journeys, all may be completed in one round and the same average speed kept up. When a round—perhaps a long one—is finished, it is unnecessary to go to the



Dr. Baigent, Northallerton, and his two cars.

Motor Cars for Medical Men.

Dr. Hunter.

stable for a change of horses; the car will stand unattended during luncheon, and is ready for as many further miles as required. Again, on returning home alone there is no trouble to find the coachman; the motor is driven straight into the coach-house and left without further anxiety. In these and numerous other ways much time is saved, more work may be done with ease, and patients residing at a distance may be visited as often as necessary without fatigue; consequently what used to be a long day's weary work is now quickly over.

This saving of time is not all. Motor driving is invigorating, a relaxation from work, a pleasure, and—probably much to the surprise of most people—is infinitely warmer in winter than horse driving, and also cooler in summer.

So far as accidents are concerned there is nothing more dangerous than the horse; in this respect motors will compare most favourably.

From the First Confident, Safe, and at Home.

With regard to reliability my own experiences are highly satisfactory. During the past year I have motored in all weathers, over all kinds of roads, and at all times without the slightest difficulty, and, with the exception of a little trouble with the clutch bearing (due to the lubrication I neglected after my first three days' driving), I have had no breakdown or trouble of any kind, and have driven many thousands of miles, always driving my car home. During this period I have only found it necessary to use horses about ten times, mostly due to rough stones on the roads during repairs. No medical man need have the least concern about the management of a car; motors are very easy both to drive and understand. With a reliable car there is little fear of a breakdown. Personally, I had no previous knowledge of motors or motoring, and did not know the names of two cars before purchasing; yet my first drive of eighteen miles was done in a little

over threequarters of an hour. From the first I felt confident, safe, and at home. I say this in no manner of boasting, but merely to remove any misgiving in the timid. No engineer is necessary. For cleaning, an intelligent coachman is ample; ordinary adjustments are a pleasure to one's self, or the coachman may easily be taught, and for small repairs few places are without their cycle and motor experts.

The total cost of running is rather difficult to estimate on account of deterioration of car and tyres. Deterioration is to me an unknown quantity, and any estimation of tyres before purchasing varied so widely as to be valueless—one stating a set of tyres every three months; another, tyres would last for years; or the usual indefinite reply, "It depends upon your roads and your mileage." Given careful driving, avoiding loose stones, declutching at the corners, speed not over twenty miles per hour, not too quickly up hills, and the repair of all larger cuts with "fill-cut" or other tyre-stopping to keep out the mud, I would say tyres should last any ordinary user from one to one and a half years; after this the tyres will not be valueless, but new ones for the driving wheels will be required.

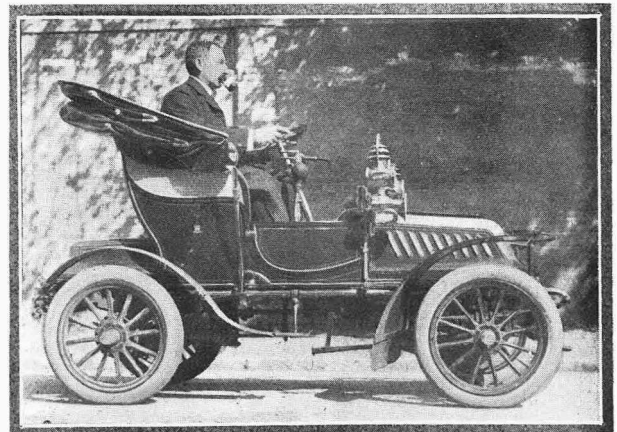
All other expenses, including repairs, petrol, oil, etc., need not act as a deterrent to any keeper of horses, and whilst the cost of running a car will probably never fall to the cost of one horse, where time is precious or several horses are used, everything is in favour of the motor.

My advice to medical men contemplating making a change would be to buy a reliable car—a car with a name and a record—and after a fair trial and confidence is gained, part with all your horses and hire any little horseflesh you may subsequently require. Do not be tempted to keep both and double your expenses. If one car

only is your object, do not buy anything under 10 or 12 h.p., no engine with less than two cylinders, and let the car have a record for reliability and not



Dr. Reckitt, of Boston, has had his coachman-gardener taught to drive his car, which he does very well indeed and executes all running repairs. The car is very largely used, and proves most beneficial.



Dr. Chambers, in unprofessional attire.

speed. This no doubt sounds unnecessarily powerful to a non-motorist, but the purchaser will find with anything smaller in twelve months or less he will long for more power or sell at a sacrifice.



Dr. T. Henderson Pounds, Derby.

So far, however, it is a delightful little vehicle. Those who contemplate using two cars would be well-advised to commence with the smaller one.

The ideal small car for a doctor's use has probably yet to be designed. The requirements are silence, solid tyres, ability to get in or out on either side, the engine starting from the seat, good protection from the weather, dust, and mud, and a comfortable seat to be placed in the car rather than on it. Where frequent calls are made—and here the run-about is useful—the trouble of starting the engine from the front and consequent soiling of the hands is a great drawback, and calculated to keep many outside the ranks of motoring.

WM. BAIGENT, M.D.

Inexpensive. Reliable. Delightful.

I am unable to speak from an experience of more than two months with a car, having used a motor cycle in conjunction with one horse for a year previous to its purchase. As regards cost of upkeep, the first consideration is naturally the size and consequent weight of car. I am content with low horse-power, i.e., five, and two seats, as represented by a 1903 pattern



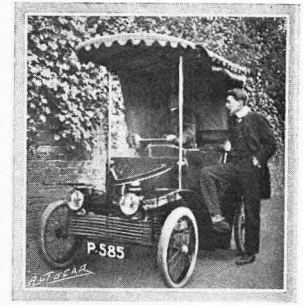
Dr. Tiffen, Eastbourne.

Vauxhall. The wear and tear driving at an average speed of fifteen miles per hour is, in my opinion, almost a negligible quantity, or at the most no greater than that of a horse, harness, and cart. The actual cost of running (daily) has worked out at one-third that of the upkeep per week of my horse, viz., between 2s. 9d. and 4s. My mileage per gallon of Pratt's A spirit is forty in a very hilly district, with frequent stoppages. I reckon now to do the same amount of work in about two-thirds

the time occupied with a horse. Before purchasing my car I had ample, and I think justifiable, faith in the reliability of the petrol motor, and this faith has now been strengthened, inasmuch as I have at present never experienced a moment's worry on the road. The whole of the working parts of the car are attended to by me personally, who am not and never was in any sense a mechanic, an "odd job" boy doing the ordinary washing of the body; in addition, both tyres and electrical ignition receive my constant and close attention. Minor advantages that appeal to me are the facts that my car is ever ready for the road, entirely independent of a groom's attentions; requires no immediate care upon arrival home at whatever hour; is a source of interest and amusement; is far less rackety to the nerves to drive than a horse, landing one home from a long round of work comparatively fresh; lastly, no scruples of conscience need deter one from running one's car for pleasure's sake in spare time, whereas a horse in daily hard work requires rest whenever it can be granted, and during that period of rest still eats, still requires a bed, and the attentions of its groom. Hail the advent of the motor car as an inexpensive, reliable, and delightful means of locomotion, say I!

Motor Cars for Medical Men.

F. C. H. HOME.



Dr. Home, Egham Hill.



Dr. and Mrs. A. P. Russell.

Horses no More.

I first made use of a motor in my practice—a country one—about three years ago. I had two horses previously. I immediately sold one, and kept the other until I saw how things worked. Of course, three years ago a motor was a very different article from what it is now, and I must say I had a great deal of trouble with my first one, and it cost me a great deal in upkeep. About two years ago I sold it, and purchased a 4½ h.p. Swift. This worked so much to my satisfaction that I disposed of my remaining horse, and used nothing else but the motor. It is most difficult to give any exact idea as to the comparative cost of motors and horses, as so many things have to be taken into consideration.



Dr. H. G. L. Allford, Hastings.

Apart from actual breakages, which vary greatly, and the actual cost of petrol and oil, and apart from the wages of a lad (not an engineer or skilled chauffeur, either of

Motor Cars for Medical Men.

whom is a luxury and totally unnecessary), which every country doctor must keep, the actual cost of keeping a car will vary as to (1) the knowledge of the details of the car possessed by its owner, the possession of which will enable him or his lad to make numberless small repairs and adjustments; (2) the care bestowed upon it; (3) the manner in which it is handled; and (4) the description of the roads to be travelled over, the last two telling most as regards the tyres—the most expensive item of upkeep. It is only necessary to read accounts attempting to give an idea upon this question in order to get some notion of the impossibility of arriving at a definite opinion. Speaking generally, however, I should say that in a case where three or four horses are kept there would be a very great saving in using a motor, as it would easily do the work of that number of horses and in less time. But when it comes to a case of only one or two horses, then I do not suppose that, taking into account the groom or lad's wage, there is any great difference in the cost. But, of course, in this case also there is a vast saving of time, and that nowadays is a great consideration. This, of course, is now more than ever in favour of the motor, as it is so much more reliable than formerly. With my first little car I must admit I was always glad if I got safely to the end of my journey, but with my Swift I was very much surprised if I stuck on the road.

As to the idea that it is necessary to be an engineer one's self, or to have an engineer, it is all fudge and nonsense. I had no engineering knowledge whatever, but before I even mounted a car I made a careful study of it with a friend who possessed one himself. I studied it carefully, and made myself thoroughly acquainted with the principles upon which it worked and the details not only of the machinery, but also of the driving. I put myself, in imagination, into all the conceivable difficult positions in which I could possibly ever find myself, and learnt how to act in each on the spur of the moment. In my opinion, it is failure to thus make one's self, so to speak, a part of the machine from the very outset, that is responsible for so many accidents, and which leads men to give up motoring in disgust, because they occasionally find themselves "hung up" on the road, the cause more often than not being some trifling matter which from ignorance they have been unable to remedy. After becoming thus thoroughly acquainted with all these details personally, I instructed my groom, and in a very short time he knew as much as myself, and drove me regularly.

In conclusion, I can emphatically say that under the above conditions, were it only for the saving of time and the increased measure of comfort and ease in travelling, I should never dream of returning to the use of horses for country work. I cannot say anything more as to cost of running a motor than I have, but the cost of a groom may be lessened, for it is in many ways desirable to make a fresh start in that respect and employ a sharp intelligent boy or lad who will be keen to learn and devoid of the prejudices of the groom. I certainly think that for a doctor a small car—say 6 h.p.—is the best, for in an emergency he may perhaps have to turn out alone, and it is much more easily handled in many out-of-the-way places to which he may be called. I think, from what I have seen of some of the small cars that are being turned out at a very low price, that they are much too light to stand the jars and vibrations inseparable from constant use on all sorts and conditions of roads. It must be remembered that the doctor is not only a fair weather motorist, but has to travel at all seasons of the year. C. J. TIFFEN.

A Motor Car will pay for itself in Two Years.

It is now seven years since I gave up horses for a motor car in my practice (which comprises country and town work), and I cannot imagine that I shall ever go back to the use of horses again. As a pioneer in the motor movement in this district, my experiences have naturally been varied, but what stoppages I had in the early days were generally due to minor derangements or my own want of management, and I have very seldom been unable to get home. Moreover, the great improvement in reliability and power which is exhibited in the motor car of to-day renders these temporary breakdowns less and less likely to occur.

The saving of time which the motor affords as compared with the horse is a most important advantage to



Dr. Firth.

a medical man. I have sometimes done a round of thirty miles in a morning, which would be impossible with a horse. Then the motor is ready at a moment's notice for a night journey, whereas formerly there was the manservant to knock up and the horse to harness, causing at least threequarters of an hour's delay before one could start. The other night when summoned to an urgent case in the country I had gone out, seen the patient, and got back to bed before the messenger who came for me had reached his home.

I may say that I began motoring with a 3 h.p. Benz, and now have, in addition, a 14 h.p. Lucas; also that I have always driven my own car, and have usually done the small necessary repairs myself, as I possess a workshop and am fond of mechanics.

As to the relative expense of horses and a motor car, in the first place one small motor car will do all that two horses can accomplish. My two horses and two carriages used to cost me about £150 a year; whereas the motor has cost about £30 a year for running and upkeep; so that, allowing £250 for initial outlay, I reckon that a small car would pay for itself in about two years.

As a method of travelling, the motor car is decidedly the more pleasant and less fatiguing. I shall never forget the discomfort of riding in a dogcart after a drive in my car, and I cannot say that the vibration and effort of steering the car have ever unfitted me for any surgical operation. But I am sure that the constant travelling in the open air, instead of being shut up in the brougham—as I formerly was—has materially conduced to my health. I also get far more enjoyment out of the car, for the horses were only used for professional work; and I feel far more independent.

I am sure that it is not necessary for success in using a motor car that the owner should either be or employ an engineer. All that is necessary is that he should learn to know thoroughly the different parts of his car and their functions, should exercise commonsense in the use of levers and gears, and take ordinary care in the driving, lubrication, and cleaning of the machine.

With regard to the exposure of driving a motor car in bad weather, although personally I feel the cold very much, I cannot say that I have ever been the worse for a motor ride. Of course, proper clothing must be worn, and many cars for medical men are now fitted with hood and glass screen, which add greatly to the comfort of travelling in bad weather.

In conclusion, I would say that, besides giving to the busy practitioner more leisure by the rapidity with which he gets over his work, the motor car affords him another hobby for his spare time and an additional interest in his life.

CHAS. FIRTH, M.D.Lond., F.R.C.S.Eng.,
Chairman of Kent Automobile Club.

Would not return to Horses at a Gift.

I have used motors in place of horses in my practice—country—for the past two years, and I would not again go back to horses (for my professional work) if they were offered to me as a gift.

As a result of my experience, I consider that a motor will do the work of three horses at the cost of two, but in half the time. I can feel certain of starting on a journey at five minutes' notice; and the pleasure and exhilaration of driving a motor need only to be tried to be appreciated.

My late groom is now employed in looking after my cars, and is quite capable of keeping them in order and doing small repairs or replacements. The chief troubles I experienced with my cars are connected with the tyres and the ignition. I would recommend



Dr. Telford Smith.

for doctors solid tyres and magneto ignition. The yearly distance done on my cars would come out at between 5,000 and 6,000 miles. For an outlay of about £250 a good reliable two-seated doctor's car, with hood and wind-shield, can, I think, now be obtained; while for half that sum a satisfactory second-hand car can often be bought.

Motor Cars for Medical Men.

Among the most important requirements for a suitable car for a doctor I would name strength, simplicity, accessibility, silence, and ease in starting. It is needless to say that the type of car advisable depends mainly on the kind of practice for which it is required. For town or suburban work a light runabout car is most suitable, while for an extensive country practice a heavier and more powerful car is desirable.

T. TELFORD SMITH, M.D.

His own Engineer.

I feel disposed to think that motor cars will be found more useful to the profession than horses. I have not had any special difficulties so far. I am my own engineer, having given a little attention to the subject at the works where my car was made.

One point that will bear very favourable comparison with horses is the rapidity with which you can start out, provided you keep everything in good order.

J. TEARE.

Leisure for Private Affairs.

I have now had an autocar—a 9 h.p. Beaufort tonneau—for six months, having previously had several horses and driven in brougham, private hansom, and victoria. I may say at once I am quite satisfied with my new love and have no reason to hanker after the old. When I first used my car I found the increased speed a little disquieting, until, having myself acquired the art of driving, I found the control was quite satisfactory. I very soon realised that I had now actually a little leisure to manage my private affairs, and that when I had become a little stale from the rather depressing atmosphere of medical practice I could now and again steal away into the country and refresh both mind and body with glimpses of pastures new. Motor-ing to my mind is the most charming of all modes of travel.

As regards cost, the car is sold at £300. My expenses for petrol, oils, and renewals (including two new solid Sirdar rubber tyres to back wheels, to replace pneumatics, one of which had burst) amount to £29, and of this £13 are for the tyre replacements. In addition to this, of course, there is the salary of driver and the rent of coach-house and the usual licensing fees. I have driven about 1,500 miles. I do not advise a medical man to drive his own car in traffic. It will always pay him to get a competent driver to devote all his time to the car, but at the same time the owner of the car should understand and take a personal interest in the mechanism. At first the mechanism seems a little complex, but in a few months it will seem very simple indeed, and should the car not run sweetly an instantaneous diagnosis of the trouble can be made. An owner of horses is very helpless if his horse is ailing, and a bad leg may remain useless for months, but a broken or worn-out part of a car can usually be replaced at once, or at most in a few days.

In conclusion, I may say that a medical man's car should have solid tyres fitted to its back wheels.

THOS. A. WATSON.

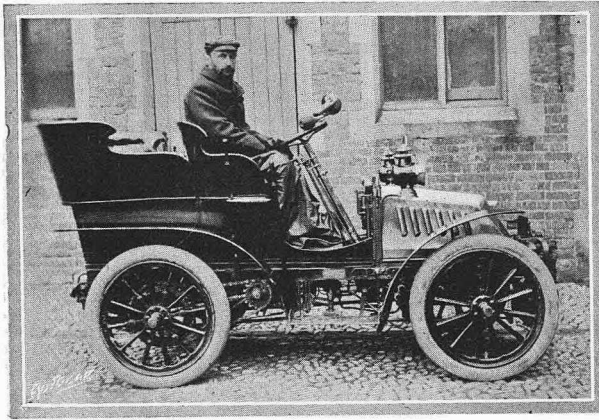
Motoring for Lunacy.

Of the wisdom or otherwise for a medical man to sell his horses and buy motors I am not in a position to speak with authority, as my practice is in lunacy, and my patients for the most part reside under my own roof. I bought my motor—a 6 h.p. Turner-Miesse—chiefly for their, and my, amusement, although it has to do serious work. I drove it in the two months February and March about one thousand

Motor Cars for Medical Men.

miles, at a cost of about 9d. a day, or about 14d. a mile for paraffin, which, as everybody knows, is the fuel for the Miesse.

I took it over with about a day's instruction, and had no difficulty. I have never had to stop on the road, except for minor adjustments, but once, and then it was entirely my own fault. The speed of the car is sufficient for anybody, and hill-climbing its strong



Dr. Sankey

point; indeed, it gains speed uphill. It is perfectly indifferent to weather, silent, almost vibrationless, and very comfortable.

I think mine is a car which should obtain a large measure of approval from the proprietors of convalescent homes or places like mine for the reception of insane persons, as I think motoring is good for such cases. E. H. O. SANKEY.

A Pleasant Pastime.

Having had four years' experience of motoring, it gives me pleasure to say a few words in its favour, in the hope that some of my professional brethren may come to the conclusion that it is to their advantage also to possess a motor car. I believe I have been very fortunate in my experience as a motorist. I suppose a great deal depends on the type of the car one has.

I started with a motor tricycle, and after a little experience invested in a small New Orleans car, which cost £150. I then sold my horse and carriage, and this little car did all my work (a London practice), as well as many pleasant excursions, for a period of nearly two years. It cost me exactly £20 for repairs during that time, and it could do about twenty or twenty-five miles on one gallon of petrol at 1s. per gallon. I did not have much trouble with this car, and it was a source of great pleasure to myself and my wife, who could drive it perfectly. I sold it for £90.

My next purchase was a 9-11 h.p. Clément-Talbot, which cost about £330, and for twelve months this car has not cost anything for repairs, excepting tyres. Two back ones had to be renewed at the end of nine months at a cost of £6 each. The two front have not been punctured. This car has done more than 10,000 miles without a single repair except what I do myself, such as grinding-in the valves, repacking the pump, adjusting the bearings in the wheels, and keeping the engine perfectly clean. These small attentions I make a pleasant pastime.

I think every motoring medical man ought to be able to drive. He is then independent of a chauffeur, and can employ a youth, who will keep the car clean and do what he is told, and with a great saving in wages.

Not only can I get through my rounds in half the time formerly taken by a horse and carriage, but I use the car for long country runs in the afternoons and for week-ends. I have never been delayed on the road by anything in connection with the engine, and only twice from tyre troubles. The car is most reliable in every respect, and friends have remarked, "You might as well be sitting in your own armchair for smoothness and comfort."

The electrical ignition gives no trouble. I have had two sparking plugs at 7s. 6d. each, and they neither get dirty nor broken, and seem as good now as they were six months ago. I have a large accumulator, which has taken the car through Wales, and was working every day for four weeks without running down. I recommend a pair of non-slipping bands vulcanised on the tyres as a protection against side-slips and punctures.

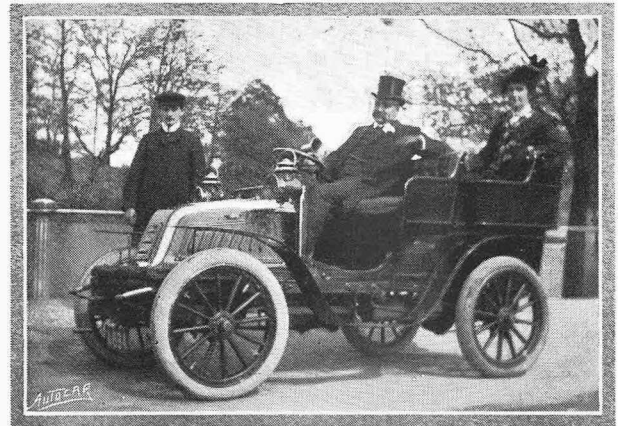
An Instructive Comparison.

Now as to the cost of horse and carriage. I happen to have my account book before me, and it works out as follows:

HORSE EXPENSES.	Per year.
Horse expenses (per week 15s., this includes food, hay, and straw)	40 0 0
Shoeing	4 0 0
Veterinary account	2 0 0
Harness repairs, average	1 10 0
Carriage repairs, average	12 10 0
Coachman, 26s. per week	67 0 0
Livery, boots, whips, sponges, etc.	3 0 0
	£130 0 0

MOTOR CAR EXPENSES.	Per year.
Tyres, average cost	20 0 0
Petrol for 100 miles per week (this is probably more than the horse has done) at 1s. per gallon for 25 miles	10 10 0
Repairs average about	12 10 0
Youth at 15s. per week	40 0 0
Sponges, leather, etc.	1 0 0
	£84 0 0

The figures given are the actual amount the horse and carriage cost me per year. The motor car would not have cost me nearly the amount stated had I only done



Dr. Hunter, Clapham, S.W.

one hundred miles per week. On three occasions lately I have measured the amount of petrol consumed on a run to Brighton from my house—a distance of fifty miles exactly—and found on each occasion it was one and a half gallons, and the time occupied on the journey was two hours.

In conclusion, I can add from my own experience that a motor tour with a good car and congenial society gives one a delightful holiday.

S. R. HUNTER, M.D.

Trains no longer used.

It is now considerably more than two years ago that I began to use a motor car for professional purposes in London, and I may say at once that I am more than satisfied with the results.

First as regards cost. My original car—a 4½ h.p. De Dion (genuine licensed)—cost just under £150 to run during last year, and less in proportion during the ten months in use of the previous year. This includes everything except depreciation. I am now using an 8 h.p. De Dion, which I find is no more expensive to keep up than the smaller one.

Secondly as regards convenience. Both my cars have been of more use than any horse-drawn carriage, for I can do my work more quickly, distant visits are more easily paid, and one does not have to consider traversing the same ground twice over.

Thirdly as regards general utility. Apart from professional purposes, I make great use of the car in the holidays, and when time will permit for country journeys; in fact, I hardly ever go in a train.

Motor Cars for Medical Men.

Argyll—costs me about £100 a year, including lad's wages, not more, and does the work of two horses, which would cost me £200 a year, including coachman.

I find I save as a rule quite an hour a day on my round.

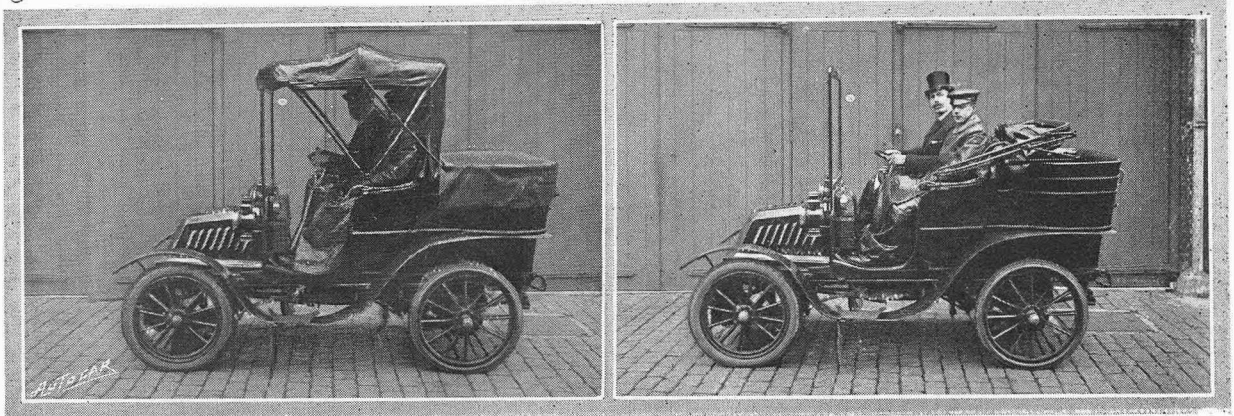
The comfort in driving a motor is vastly greater than in riding behind a horse; the steady pull instead of the intermittent jerk.

I have never kept a mechanic, and I knew nothing about engines when I first started motoring.

As regards reliability, I freely admit that I have had delays upon the road when "things happened," but this occurred mostly in the "old Benz days," and I seldom have to stop now. Pneumatic tyres, that seem such a bugbear to some, have served me very well upon the whole. I have always used Michelin's extra fort, and am quite satisfied with them.

A great point in favour of the car is that it does not get tired, and after a long round it is quite ready to take the doctor and his family for a pleasure trip to some neighbouring seaside resort, for instance. I also find it most useful in enabling me to attend meetings for the discussion of professional subjects in the neighbourhood, which I should be quite unable to do did I depend on either horseflesh or trains.

In conclusion, I would like to say that my general



Dr. Attlee, prepared for fair weather or foul.

I have found both cars exceedingly reliable, the chief trouble, of course, being tyres. This has now been reduced to a minimum, as I have recently had solid (Sirdar Buffer 2½ in.) tyres fitted to the back wheels. The springs of the 8 h.p. De Dion being good, I find the solid tyres make no difference to the comfort or speed of the car; side-slips are reduced, and they cause less dust. Since they were fitted over 2,800 miles have been covered, with only one puncture in the front pneumatic tyre.

The car is fitted with a glass shield and removable hood. The wind shield has only to be tried in order to appreciate the comfort of it. It is kept permanently on the car, as it keeps one warm and clean.

All minor repairs are done by my lad or myself in a small workshop at home, and accumulators charged off the mains, thereby saving much time and trouble.

JOHN ATTLEE

Duty and Pleasure.

I have relied principally on motors to carry me on my daily round for the last four years, and would not return to horseflesh on any account. I have found motors cheaper than horses. My motor—an 8 h.p.

health has been better, and I have been far less liable to colds since I took to motoring, and am very much inclined to argue *post hoc ergo propter hoc*.

CLAUDE M. VERNON.

Some Practical Advice.

For twelve years I used horses in my practice—generally two, sometimes three. For the last three years I have used motor cars only.

I knew nothing about engineering when I got my first car—hardly know how to handle a spanner. I do not keep an engineer, nor, indeed, a man from a bicycle shop at all. I employ a young man, when I need him, to wash the car, do any dirty adjustments, or repairs. The driving and general superintendence I do myself.

The first car I got—a 6½ h.p., belt-driven—I have still, and it has done all my work this winter, averaging often twenty to thirty miles a day. I hope soon to be in possession of a 15 h.p. Duryea, as the other has not quite enough horse-power for some of the rather steep hills in my district when I wish to take passengers, which is often.

The result of my experiences, then is briefly—

Motor Cars for Medical Men.

firstly, I should never wish to return to horses for the following reasons: A small single-cylinder car, managed in the way I manage mine, can be run for a cost of under £50 per annum. A good part of that is tyre expenses, and a car mounted on solid tyres should, and I am sure would, cost considerably less per annum. Such a car will do the work of at least two horses, and in less time. The rapidity with which I can get my country rounds done, compared to when I used horses, is most striking. All users of horses will at once perceive the saving in current expenses I have made by the change to motor.

Then as to which is the pleasanter mode of conveyance the motor has it easily. The exhilarating floating motion, the distraction to the mind from the worries incidental to medical practice in listening to the throb of the engine and noting whether it takes the hills well or ill, and the knowledge that you are never pressing a tired animal, all make motoring the ideal method of travel for the doctor, who doesn't just go out when he feels inclined or now and then, but has to go day after day over the same roads very often.

My advice to my medical brethren would be to get a good car—and there are plenty of good and reliable cars to be had now—and not to look for the cheapest car. Next to get a simple car—simple to look after, simple to adjust, and simple and inexpensive in renewals—and after an acquaintance of more than a year with them I can strongly recommend the Duryea cars as meeting these requirements.

As to horse-power that depends partly on the country where it is to be used, but I should say that 10-12 h.p. is a comfortable minimum, giving you a reserve of power for heavy roads, and enabling you to glide up hills without frequently changing gear—and this again is one of the points in which the Duryea cars excel others, even of much greater horse-power.

The silencing of all cars is now attended to by the makers much more than it was a few years ago, but the more silent car is the better for medical work.

Having fixed on a car, the next thing is to set himself to learn the how and the why of the different parts of his car, which can be easily done by anyone without any previous mechanical or engineering training; and having got the car, to continue to give it a reasonable amount of thought and attention, himself looking round the car and seeing that things are right before setting out. This with a little experience is quickly done, and on this depends mainly the reliability of the car: unreliability is generally the fault, not of the car or the maker, but of the owner and driver.

There are many other points in which the motor has the advantage of the horse for a doctor's work. For instance, the rapidity—five minutes at the outside—with which one can set off in answer to an urgent call, and the freedom from anxiety as to whether your horse will take cold when kept waiting for some time at a patient's house on a cold and wet night. Then, too, the pleasure of being able to pull out your car at any time and take your friends for a drive without having to consider whether your groom will grumble at the extra work, or whether the prospect of a long round to do on the morrow forbids the enjoyment.

J. D. MACKAY.

The Necessity for Careful Attention.

I will commence with the most important point—viz. the expense. I have been running my car—a two-seated 9 h.p. (De Dion engine), made by Dennis Bros., Guildford—regularly winter and summer for eighteen and a half months, the outlay in repairs and

lubricating oil being £55. This I could much reduce with my present experience, and if I were starting a new car, for out of this amount £12 has been spent on tyre (pneumatic) repairs, and £15 was paid for complete new wheels behind, shod with solid tyres, with which I have been running since October last, and they are now as good as new. Another item—£3 3s.—was for new brakes, which I found necessary after running my car for only five months. The brakes were never good ones, such as we should expect at the present day. My present brakes, which have been in use for fourteen months, are still unsatisfactory, and have consequently run me into an expense of about £5 for repairs due to accidentally fouling a cart, which smashed my wing and ripped up my tyre. I am going to have my internal expanding brakes replaced by external grip ones, such as are fitted to the De Dion genuine cars. If I had solid tyres all round, and really good brakes, I should, I think, have diminished my expenses by about £25, and that estimate gives you £10 for repairs for your solid tyres. I have not included the amount of petrol, as of course that is wholly dependent on the amount of mileage. I should



Dr. and Mrs. Jollye.

reckon petrol at 1s. 6d. for every twenty-five miles or so.

Another point very naturally asked is, "How often during these eighteen and a half months have you been towed home or had to walk it?" Only once have I not come home, and that was due to a pin giving way in the differential gear case, and which I could not mend. I may say that I never take anyone with me in the way of a man for repairs except at night. The reason of this good record is that my man, who was formerly gardener, looks after the car conscientiously, and sees that all the parts are acting well before I start, and the engine is as clean now as it was when new, and this by a man after only a week's instruction by the chauffeur who came down to teach me to drive. If you have not a man of this stamp I would never advise any medical man to start a motor, unless he means to do a good deal himself—which is an impossibility. I should say.

The time one saves is practically half the time one formerly spent on the road. You can average eighteen miles an hour, instead of the usual time with horseflesh. Any medical man who keeps, say, three horses, could easily put down two. I think one is necessary, or, at any rate, a bicycle. The car must be thoroughly

cleaned every night. I know it is a machine, but those who think that any treatment is good enough for a machine had better not give up their horses, for a badly-kept car is sure to give constant trouble on the road.

The essential points to bear in mind by those medical men: thinking of starting a motor car are—

1. Get a good new machine with solid tyres; horsepower to be nine or ten.

2. It will pay well if you can put down two horses.

3. If you have not got a conscientious man with a certain mechanical turn of mind, you will most probably come home more punctually, and be better tempered when you get there, if you stick to horseflesh.

4. Don't think—the car being a machine—that your man requires no time to look after it. There is a good deal to do besides cleaning the mud and dust off. All nuts, bolts, wires, and connections must be continually gone over, if one wishes to have one's car run satisfactorily and reliably.

F. W. JOLLYE.

M.D., F.R.C.S.E., D.P.H.Lond.

A Relaxation from the Strain of Medical Work.

Before definitely deciding on a car, I got all the literature on the subject I could, including Harmsworth on motors, and *The Autocar* for about a year, from which I got many valuable hints, and also wrote some doctors who had cars, and the points some of them emphasised were that pumps and chains gave them more trouble than anything else, so I decided to have a car without them, and fixed upon a 9 h.p. Argyll, and it has so far given me no cause to repent of my decision. It was delivered in August last year, and the first day I got it I drove fifteen miles without any trouble, although I had never steered a car before, which speaks strongly for its simplicity and ease of changing the speed gear, which I think is very important for a doctor, especially for night work. Since



Dr. Cameron.

then I have driven 5,250 miles without any mishap or accident, with only one involuntary stop, due to the contact points on coil getting fouled, which I at that time did not know required attention.

I have driven it steadily during the winter in all weathers—rain, frost, and snow—and, having a hood and glass front, with much greater comfort to myself than a trap. Formerly I kept two horses, which I have disposed of, and, instead of having a groom at £1 a week, I now pay 7s. a week to a man who comes daily and washes and cleans the car. I look after the

Motor Cars for Medical Men.

mechanism and drive the car myself, from which I derive great pleasure, as I find it a relaxation from the strain of medical work, and I find I have much more time to myself, doing now in a forenoon what used to take me forenoon and afternoon.

I have pneumatic tyres, and during the 5,000 odd miles the car has run have had three punctures—one only when doing my rounds, the other two when on pleasure trips.

As regards expense I am not yet in a position to state it, as I am running my car for a year before totalling up; but so far to date, apart from petrol and oil, my expenditure has been various outlays £2 (including new brake blocks and spring hangers, and new trembler blades and contact screws), and after running 5,000 miles I had to retread my back tyre covers at an expense of £5 15s.

My car has never been near a motor shop, or had a motor engineer working at it, since I got it. I do all the necessary little touching-up myself.

H. FRASER CAMERON.

No Return to the Horse.

Though accustomed to horses, riding and driving, for over thirty years, I am quite convinced that for my work (town) I get far more satisfaction from my car. I drive it myself entirely, and am quite competent to replace valves, plugs, etc., should they come to grief—a misfortune I have yet to experience. I have a 6 h.p. De Dion-Bouton, and do not wish for a better car. It is so far absolutely reliable, and if one only takes the trouble to learn such minor details as I have referred to, if unable or unwilling to employ a motor man regularly, there is little to fear in the way of being stranded. For my own part, I shall never go back to the horse.

My working expenses average just on four shillings a week for petrol and lubricants, which is slightly over *one-quarter that of feeding a horse here*. I had extra thick tyres (Michelin) put on, and though amongst other things which have been found embedded in them were two copper nails over $1\frac{1}{2}$ in. long, they did not penetrate the inner tube. My motor man is my erstwhile groom, who keeps the machine as he did my former carriages, and cleans the machinery, fills up the petrol tank, and lubricates when necessary.

H. F. TOWNSHEND CHAMBERS.

More Work Less Worry.

The past twelve months of miserable rain, mud, and wretched roads ought to have been a good test of the reliability or otherwise of the motor for medical men. I know many of my medical friends find their horses have been very severely tried during the past winter.

When I burnt my boats behind me last summer and sold off my traps and horses my friends grinned forbearingly; but I am happy to say I am wearing the grin now, as my motors have emerged triumphantly from the test. After practically nine months of continuous driving over the vilest of roads in the vilest of weather, I am just about to start off on a tour of the South of England on my merry little Oldsmobile, which has stood the brunt of the hard work. If this is not "reliability" I do not know what is. I have an extensive town and country practice, as may be imagined when I state that my average monthly mileage is very nearly six hundred miles. I own a 3 h.p. motor bicycle and a standard $5\frac{1}{2}$ h.p. Oldsmobile car. I have nothing but praise for either vehicle. The car has done more than four-fifths of the work, and is there-

Motor Cars for Medical Men.

fore deserving of the greater praise. It has never failed me on the road, and is always ready and willing. This is a very hilly district indeed—1 in 8 is plentiful, 1 in 6 here and there, and a few bits of 1 in 5 to 1 in 4½. I have never once stuck on a hill, and the car takes them all at a fair speed. I have fitted a cut out to the exhaust, and discovered thereby that I have gained three miles per hour and done away with any necessity for a second speed. With one up the car takes anything up to 1 in 16 on the top speed. I have frequently on fairly stiff slopes run past large cars grinding up on their first or second, whilst the Oldsmobile merrily pushed on on the top. This is a great gain for country runs, whilst the beautiful silence in the town is still preserved. In the country I now average nineteen miles per hour. My fastest run was ten and a half miles in twenty-seven minutes. This was one of the rare days when the roads were dry. Petrol consumption works out at from twenty-six to thirty-two miles per gallon, depending very much on weather and road conditions. As to tyres I had absolutely no trouble. I fitted Wilkinson treads to the back wheels, injected Shippey's puncture-proof jelly into all four tyres, shellaced them well on to the rims with shellac varnish, and blew them up tight on the 1st of October. From that day until April 1st—a period of six months—I never touched the tyres at all, not even to blow them up. On April 1st I took off the Wilkinson treaded tyres and put them away for next winter, and fitted on two new tyres to back wheels retaining the old ones on the front. One of these latter punctured last week after nearly seven and a half months faithful service. The repairers have given me an estimate of 17s. 6d. for repair of this tyre. The remaining one is still on and looking forward to the Hampshire roads. I have given it a feed of Patcho here and there, and it feels A1. My medical friends ask me, "Is it cheaper than horses?" "Well," I answer, "I cannot say. My bill for odd jobs, slight adjustments, and thorough cleaning after the winter amounts to about £10. £2 13s. is the cost of spare parts (not yet used), but you must take depreciation into account. On the whole I am inclined to think that at the end of three years there may be a slight balance in favour of the motor, but it will not be great. Where you will have gained, my friend, however, is in comfort and time. I now get my day's work done in reasonable time. I get home punctually for luncheon, and I am even home sometimes for afternoon tea. I have no scruples about over driving my horses. I have done more work in the past nine months than ever I did in my life, with less worry and bother, and I have gained one stone in



Dr. H. G. P. Le Fanu. Derby.

weight. Go and do likewise." For a doctor with town and country work I honestly believe there is no car like the Oldsmobile. The seat starting is an immense advantage, the quick tiller steering another, and the almost absolute silence in town a great boon. Nor need one be an engineer to understand the thing. My old groom is still with me. He drives the car well, keeps it clean, tests the batteries, and puts in or takes out the accumulators as required—all practically self-taught—good proof that no great knowledge is really necessary. Of course, one wants to keep an eye to the adjustments, but then one is driving the car all day, and so one soon spots any little falling off in power or a squeak here and there, "and a spanner in time saves pounds in repairs." C. RAWDON WOOD, M.D.

A Great Saving of Time.

I cannot give any decided opinion as to the comparative cost of motors and horses, as I still keep one horse where I formerly kept three, and my motor is a much larger and more expensive one than is required for a doctor's work. It is really a touring car. I find, however, that there is a great saving of time, and consequently one can get over much more ground and see more patients in the day when necessary. My coachman is now my chauffeur, and thoroughly understands and looks after the motor and also my horse. I have no engineering knowledge myself, and do not employ an engineer.

EDWARD F. CHINERY, F.R.C.S.

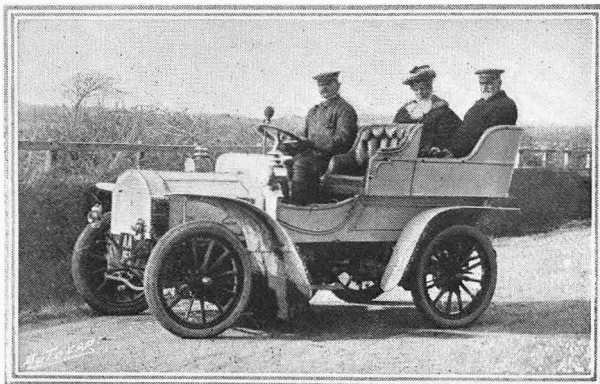
Long Country Visits lose their Terrors.

Last October I purchased a White steam car. If a thoroughly reliable car is obtained I do not consider it at all necessary to add the cost of a mechanic to that of the car. I have only employed a small boy to clean the car, keep the tanks full, and grease cups and cylinder, and engine oil cups, etc.

It is wonderful how little there is to do if all these things are kept right for you, and one can glance round and see in two minutes if they have been attended to.

The above points having been seen to, I can always be ready to start in five minutes easily. For the eight months I have been using my car the cost for actual repairs has been under £5. I run fifteen miles on a gallon of petrol at 1s. 3d. per gallon, or I can use benzine at a lower cost.

The above are the main items of cost, and I think it can be seen at a glance that it is a great deal cheaper than one could keep a horse and trap and groom for.



Dr. and Mrs. Chinery.

Motor Cars for Medical Men.

I may add that I have had no trouble with my car since I thoroughly learned it; at first I was a little bit puzzled as to the working of certain parts. I am perfectly satisfied in every way, and medical men who have long country visits to pay would find all those visits lose their terrors if they had a car to do them easily in one-third of the time otherwise required. A car is quite as reliable as any horse.

H. G. P. LE FANU.

Much Time Saved.

I use in my practice (country) a doctor's landaulette, by Messrs. Siddeley, of York Street, Westminster, and exhibited at the late Crystal Palace Show. The engine is a 6 h.p. Wolseley; the body is of landaulette shape,



Dr. Esmonde.

and when closed up protects both driver and myself from the weather. The back tyres are of double strength. I have had the car in use for about two months in my practice, and it has given me every possible satisfaction. My rounds, which used to take four hours, are done quite easily in two and a half hours. The car is very handy and easily managed. The car can go twenty miles an hour on the level, and, although it is the first car of its kind to be built, I cannot suggest any improvement in any future cars which may be built to the same design.

JOHN ESMONDE.

More Economical than Horseflesh.

From my own experience I am convinced medical men would find motor cars much more economical than horseflesh, and, of course, the saving of time is enormous. I have been using a 10 h.p. Wolseley for the last three years, and have found it economical and reliable. I have only once been delayed in paying a visit, and that was through neglect of straining petrol and the nipple of the carburetter getting choked. The repair bill has been moderate. I am strongly in favour of a sufficiently powered car, at least in a hilly place like Bristol. An under-powered car is very irritating in its slowness up hills.

P. W. MCCREA.

A few Dont's.

With perhaps a limited treasury, and the *quid pro quo* always in prominence, the most difficult problem a doctor has to contend with is the choice of a suitable car. In making this decision there are a few dont's to be borne in mind.

Don't consult too many of your motor friends. You will get a multiplicity of opinions.

Don't be guided by the views of the chauffeur.

Don't pay too many guineas or half-guineas to the expert motor engineers.

As to the relative merits of a motor car there are two good practical tests—

First. Go for a ride in the country on an average give-and-take road, and see for yourself how the car runs and how it negotiates hills.

Second. Be guided by the results of some big reliability trial or hill-climbing competition, such as the autumn 1,000 miles reliability trial of 1903.

The latter is a crucial test for any car, and the finest engineering expert in the land could not be more severe in judging the capabilities of any special car for which you may have formed a special predilection.

Last year I decided to watch most carefully a variety of cars competing in a certain class in the reliability trials which took place in the autumn of 1903, and to purchase the car which in my opinion would prove most suitable for a doctor's work. After much debating I bought a Cadillac. I did so because it impressed me by its quiet easy running and great strength for a one-cylinder car. With nine months' hard service I have proved it to be an excellent starter. The engines are not complex, and with a little time and application can soon be understood. It can be fitted with a hood for bad weather, and there is a detachable tonneau, which is a great advantage, as it will carry two extra passengers.

As regards the expense I ought not to be too emphatic. Roughly speaking, petrol costs me £5 per quarter. Repairs I put at £15 per annum. The cost of repairs this year has been *nil*, but I am making allowance for the second and third years. The tyres I place at £20 a year. The Cadillac weighing 7 cwts., the wear and tear in tyres are not so great. I pay 15s. per week to a lad whom I employ to look after the car and also do other odd jobs. Five pounds will cover rates and taxes. The above estimate is approximately the cost of upkeep.

Dr. Aird, who is an enthusiastic motorist and the pioneer in these parts, tells me that the cost of upkeep for his two cars is £150 per annum. He has a 6½ h.p. Wolseley, which has run for four and a half years, and he tells me it is running as well as ever.

DENIS G. HALSTED.

Cheap and Rapid.

My 6 h.p. De Dion has proved itself thoroughly reliable; always ready for me to go a long journey at a moment's notice. I find it a cheap and rapid method of getting about. My gardener washes down the body, etc., and I attend to the engine, from which I get a great deal of pleasure. I am just back from a run of four hundred miles through Norfolk and Suffolk, and had no trouble whatever.

EDWARD J. BLAIN.

Invaluable to a Country Doctor.

I have been the possessor of a motor car (8 h.p. Argyll) for two years, and during that period have done all my professional work (hilly district of North Wales) with it. It has, with the exception of pneumatic tyres, proved quite reliable, and as it will attain a speed of twenty-five miles per hour on a level road it is quite fast enough for a doctor's practice. It has been the means of saving about £1 per week in upkeep, as



Dr. Halsted.

Motor Cars for Medical Men.

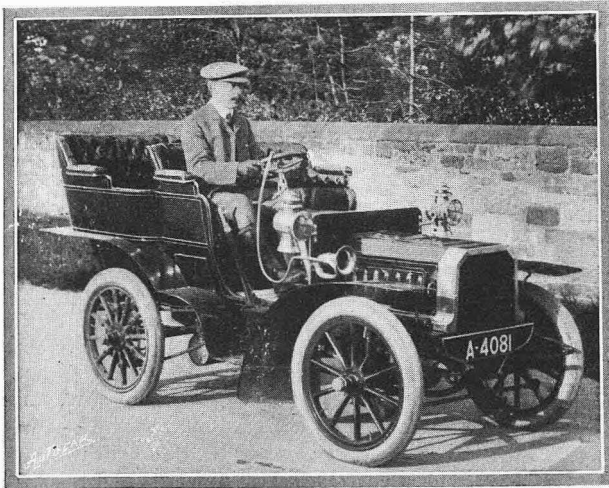
compared with the cost of keeping a horse and carriage and a servant man. I now employ a lad to wash and clean the car, and do all the mechanical work myself. I am thoroughly convinced that a motor car is invaluable to a country doctor. A good car will easily do the work of three horses, and if provided with a leather hood for use in wet and cold weather and shod with solid tyres, it can be used in all weathers and at night as well as by day. I consider that a strongly-built and solid-tyred car, and of a good reputation, quite as reliable as a train.

J. E. T.

Fondness for the Car increasing Daily.

I have only had my car—a 12 h.p. Gladiator—since the beginning of March, so cannot claim to have had very much experience. Still, my fondness for the car and the sport of motoring increases daily. The exercise is exhilarating, and the time saved enormous in comparison with the ordinary method of driving horses. Then as regards looking after the car, I may say, firstly, I drive myself, and my groom looks after the carriage-work and the outside of the engine. The "works" are my own care, and the engine—a two-cylinder Aster—is simplicity itself to understand, and needs no special knowledge of engineering.

I have had very few troubles on the road—none that I have not been able to put right myself in a very few minutes—a broken wire requiring mending, a run-down accumulator wanting charging, and an empty petrol tank are the sum total of my troubles. Nothing has gone wrong with the engine, and I am exceedingly



Dr. H. C. Barr, Wentworth.

pleased with its working. I live in a very hilly country, but my car will take any hill with five up.

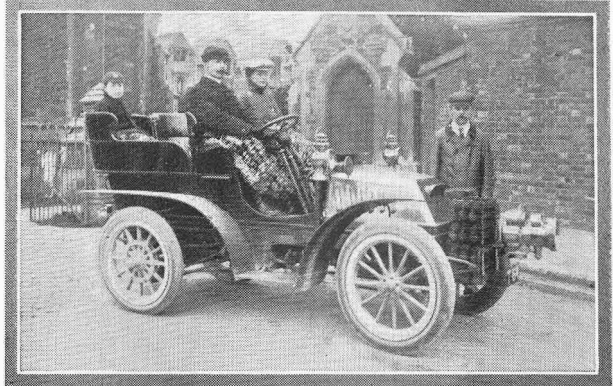
The longest run I have made on the car was from London about 170 odd miles—which it accomplished without a hitch of any sort, and with only one stop to take in petrol. With regard to cost as compared with the upkeep of a horse, one must remember a horse has to be fed, working or not working, whereas a motor is only fed when working. I am very pleased to see that motoring is very much on the increase in this neighbourhood (Yorks.) amongst medical men.

H. CARLOS BARR.

As Fresh at the End of a Day as at the Beginning.

For the last nine months I have driven a motor car on my professional rounds (country practice), and I

am very pleased with the result. I find I can do my work in half the time which it formerly took me. For a doctor the advantage is obvious in being able to do fifteen miles comfortably in the morning, and yet find-



Dr. V. E. Barrow, Uffculme, Devon.

ing the car ready again in the afternoon. With my Turner-Miesse steam car the hills in my neighbourhood are easily negotiated, and the comfort and smoothness of its running leave one almost as fresh at the end of a long day's work as at the beginning.

V. E. BARROW.

Makes one's Work really a Pleasure.

My car is a Cadillac, which I bought on November 17th, 1903. I have driven it some 2,300 miles through the rivers of mud which have covered our roads this winter. Apart from tyre troubles, the car has proved very satisfactory. The engine is a most powerful one, and is now running as well as when new. I have not found a hill yet that it will not go up easily and comfortably and without any strain. I have lately examined the differential gear also, and find not the smallest sign of any wear. The engine runs very quietly, especially when the car is standing, is very easily understood and managed, and gives one no anxiety.

Every car has some drawback, and the Cadillac is no exception. The pneumatic tyres sent out with the car are much too light; the dry cells are not so satisfactory as accumulators; the wearing parts of the steering gear are not adjustable, and should be made stronger; there is no means of adjusting the roller bearings on the back axle. All these are faults which I have no doubt the manufacturers will put right ere long, for the car is a new one.

I consider the car the best value for the money in the market at present.

I may say that I have had experience with two cars previous to this, and have been driving motors for three years. To have a reliable car like the Cadillac makes one's work really a pleasure, and the longer the journeys the better one likes it!

I have not yet figured out the cost of running, but should say that for a practitioner who requires to keep three or more horses the upkeep is likely to be much less than for the latter.

GEO. T. B. WATTERS.

Punctuality in Keeping Appointments.

I am quite clear as to the enormous convenience and time-saving effected by the use of a car, and, as far as my experience of running about a thousand miles goes, I can say that I have always got to my destination punctually and without any breakdown. Perhaps free-

dom from puncture (which I have to a great extent secured by using solid tyres on the back wheels) gives me a feeling of security in keeping appointments that I should not have under other conditions. Unless my experience in the future is very different from that which I have already had, I shall certainly not return to the use of horses for my professional work.

W. M. BARLING.

Cheapest, most Reliable, most Available.

It seems to me that the only question in comparing the horse with the motor car from the doctor's point of view is the nature of the country and the condition of the roads to be travelled over. In districts where the country is not too hilly and the surface of the roads fairly good there is no doubt of the supremacy of the car, but in places where the hills are steep and the surface of the roads always loose and bad there is nothing like a good cob. [We presume our correspondent means riding on horseback, for a motor car would go easily where a horse could not take a trap.—ED.] I speak from experience in South Devon, where a car would be useless anywhere off the main roads. My advice to any doctor who was uncertain as to which to get (provided he lived in a suitable district) would be to get a second-hand car of good reliable make, and fitted with canopy, glass front, and side curtains. There are dozens on the market now from £150 to £200, and with all the tools, lamps, etc., thrown in. The initial expense as compared with a horse, brougham, harness, stable gear, etc., is about the same. Comparing the running expenses of the two, the car comes out far away the cheapest, most reliable, most available (as it requires no harnessing and getting ready), and requires least attention, no feeding when not in use, etc. Provided that the owner will take the trouble to thoroughly learn the mechanism and working of his car, his upkeep expenses will be very little, and all he will require will be to have his car washed down when dirty. Provided a car is always well looked after, and any little jobs done in spare time at home, there need be no fear of any breakdown on the road, except, perhaps, from puncture.



Dr. Bashill.

which can now be well guarded against by means of one of the many patent bands advertised. I myself find that work can be done in half the time, and on account of the canopy and glass front, in bad weather I keep dry and warm. I am sure that if once a doctor

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could be taken his round in a car he would soon give up his horses in favour of one. All that a car needs is an owner with commonsense, who understands that a machine will not go for ever without being attended to occasionally.

C. E. BASHALL, M.R.C.S., L.R.C.P.

Feeling the Way.

I started with a motor bicycle, which enabled me to serve my apprenticeship in the science of motor driving. My opinion is, they are quite unsuited to the requirements of a medical man. First, they are



Dr. Foulds, Droitwich

noisy—frighten horses; secondly, they are dangerous for night work, and in the winter next to impossible, because they cover the rider with mud, and the dress one has to adopt when riding them is not compatible with a dignified appearance.

The car I use (country town practice) is an Oldsmobile, $5\frac{1}{2}$ h.p., 1903 pattern. It is almost noiseless, easy to understand, simple to drive, and does not require a chauffeur. It weighs 7 cwt., and is quite fast enough for byroads, and a good hill-climber. I run at an average speed of fifteen or sixteen miles per hour; can reach twenty miles if required. It is most handy by reason of its tiller steering arrangement to run in and out of crowded traffic. It is not "greedy" of petrol and oil. It is reasonable in price, and honestly worth the initial cost—£150. I don't use a hood, and rarely use a back seat. It is essentially a car built for two, but I have driven on the flat with five adults crowded on. It is as good a little runabout car as a medical man can wish to own.

It has cost me, roughly, £7 per month upkeep. This includes two years Inland Revenue licenses, tyres, petrol, oil, repairs, and all outfit, and improvements; in fact, everything I have spent on it.

Tyres work out at £2 9s. 4d. per month—and I have been most unlucky in this respect, until I discovered that the rear driving wheels do best shod with the single-tube tyre covered with Smith's motor band. As a result of adopting them, I have been running the car

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since February, 1904, without a puncture. I have had eleven tyres altogether, and have worn out two.

Petrol works out at £1 4s. 6d. per month. This includes extra consumption, such as journey from London, to and from Cheltenham, to Malvern and back frequently, and numerous runs ten to fifteen miles out, in addition to the work of my practice.

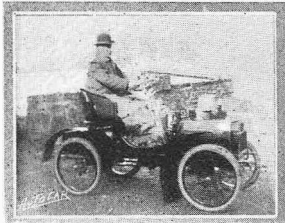
Oil works out at 1s. per month.

The year's cost of stable and two horses' upkeep worked out at £100 per annum, and, in addition, a groom's wages. I have dispensed with the luxury of a groom. My gardener cleans the car and oils it, and looks after my garden (half an acre, two lawns), and costs me 3s. a week less than the groom.

I have used the car in all weathers, and almost daily, regardless of the elements. It is hardly necessary to add that a motor car wants personal attention, careful use, and attention to lubrication. A few weeks ago I pulled the car to pieces and found the gears practically unworn. There are two speeds forward and one reverse, and this after nine months' hard wear. I have had one new chain and one new sprocket wheel, and some repairs of a minor character. F. H. FOULDS.

Much Safer than Horses.

I have been a motorist now for over twelve months. Beginning with a Humber motor bicycle, I enjoyed it immensely till wet weather came, when I got rather afraid of side-slip. I next bought a Humberette. This



Dr. Macdonald.

has given me the utmost satisfaction. I drive myself, and can keep it in perfect running order myself. A little study of the machine at first is required, and then with care one ought to have very little trouble. Of course every driver ought to be familiar with every detail of his car, in my belief,

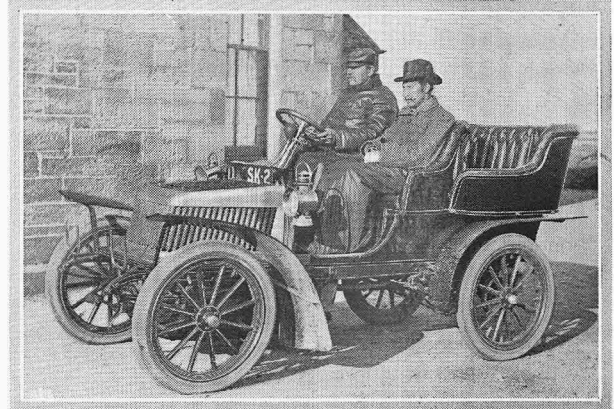
and a medical man from his training early picks it up. My car does the work of two horses in half their time, and, roughly, at about half their cost. If one car only is kept a bicycle would be necessary for any occasion when a repair was required, although that has not occurred to me. Motoring, I think, is much safer than horse-driving nowadays if the motorist is careful. Your car does not shy you into the ditch or jib when you are in a hurry, but sometimes the horses you meet are inclined to do so. My car climbs any hill.

R. CADELL MACDONALD, M.D.

No Comparison between Horse and Motor Car.

Prior to 1900 I had always to keep five horses in winter time and from three to four in summer, the remainder of my work being done by cycle or train then. Now I keep a motor car, and am independent of trains, horses, or cycles, and, to a large extent, of my own legs. The expenses of keeping up a stud of horses, with traps, harness, livery, etc., far exceeds the expense of keeping a motor, which will do more than four times the work of the whole lot and never be tired, and do it in a quarter of the time. Country journeys that were wont to take me from four to five hours I now do in one to one and a half hours with a maximum of comfort. There is no comparison whatever between an autocar and a horse-drawn vehicle, as anyone who has "jogged" wearily along for hours behind a horse and then tried an autocar will readily endorse. With regard to an engineer being necessary,

all I can say is I never had one. I simply bought my car, got an instructor down with it for three days, and in that time converted my coachman from his former position to a chauffeur. I admit, however, that he has rather a "mechanical turn," but he never saw a motor till then. We certainly had our little difficulties at first—what motorist has not?—but by carefully reasoning out the pros and cons. of the situation we never got left on the road except when I upset the



Dr. Elliot.

car at a bad corner. I have upset many a gig. A motor car does not start kicking when down—certainly a point in its favour. I formerly had a small Panhard car, 4½ h.p. It looks neat, but is not strong enough for climbing hills or facing winds. Since then I purchased a 10-12 h.p. Argyll, and I have had the very utmost satisfaction in its use. It always runs up easily to twenty-five miles per hour, uses no more petrol than my old car doing twelve to sixteen miles, and has cost practically nothing for repairs. I have now run it between ten and eleven thousand miles, and the only heavy expense has been for tyres, of which I have worn out only six; but this is phenomenally small when you take into consideration that this county (Caitness) does not employ a roller on its roads except those around the towns, and they are all macadamised with very sharp stones. I may say I was the first motorist in this the far north, and have never regretted it.

I may say that a motor car will go through moderately deep snow with perfect ease, and runs on pure ice perfectly if you take care at turns, as, of course, should be done on any road. SAM ELLIOT.

15,000 Miles without the Slightest Mishap.

Having had several accidents through collisions and horses falling, I determined to learn what could be done with a motor car, and forthwith visited a show and made for my choice a 4½ h.p. Stirling. This I obtained through a local agent, who gave me two lessons in driving, each of about half an hour's duration.

Considering that up to this time I had no knowledge of a car, except what could be learned from the books then published, a car could not have fallen into more amateur hands, yet for all this two weeks only elapsed before I felt quite at home with the car, and made for London—a journey of about 150 miles—which was successfully accomplished.

Now, one does not wish to convey the idea that this little car gave no trouble. It did, but only such troubles as could be easily diagnosed by anyone possessing ordinary intelligence. In fact, of all people

(engineers excepted) likely to manage a car successfully medical men should be the best, inasmuch as it is part of their work to diagnose both little and serious troubles, and personally I should have very little faith in any doctor who was not possessed of enough intelligence to manage a motor car. There is nothing intricate or complicated about a motor car. The whole theory of the explosion engine, transmission, and carburation can be studied comprehensively in a single night, and any agent will gladly give any practical demonstration that is necessary. Previously to 1901 my practice—provincial town—necessitated the keeping of two horses. Since that time one motor car has done all the work, and I may say, without going into details, that the work has been done cheaper and quicker, and when one considers the district (Potteries) in which I reside this is saying a great deal, for the roads here are exceptionally bad.

The reason some get disappointed with their cars is because at the outset they get led away in the choice of a car by a good-looking body and show finish. When deciding on a car it is as well to get one which is made for the purpose required. For instance, if economy in running is required, and short distances only are to be made, then a single cylinder 6 h.p. two-seated car is ample, but if in addition to the ordinary "round" longer tours are to be undertaken, then a two or four-cylinder car is more suited. Buyers also should see that a car is not geared too high for a district of a hilly nature. For the last twelve months I have been using a 9 h.p. Clément, which has done the whole of the work, together with several long tours.

Altogether I have run during the last two years over 15,000 miles, and this has been done without the slightest accident (except breaking a mudguard during my first lesson in driving). The greater part of the driving I do myself, although I have taught my man to drive, and I do not go in for any fancy priced-chauffeur. Neither of the two men I have had knew anything about motors until being with me.

Medical men can also put aside the question of not being able to get competent men. For one advertisement in a local paper I received sixty-seven applications, of which fully twenty would have answered my purpose, and the wage was only a pound a week.

I should also advise intending purchasers to get a car through a local agent, as many advantages are gained by doing so.

Respecting the question of having to wait a long time for spare parts, I may say that, although my car is a French make, I have always been able to avoid delay by getting spare parts made locally. J. C. TIBBITTS.

Motoring adds to the Pleasure of Work.

I have done nearly all my work (country town) for the past eleven months on a 6 h.p. Swift, and in another month shall have covered about 8,000 miles. I do not consider motoring cheap except in the sense that it saves time and adds enormously to the pleasure of one's work. My estimate for the cost per mile run is: Oil and petrol, $\frac{3}{4}$ d.; tyres, repairs, and storage, $1\frac{3}{4}$ d.; man (converted coachman at original wages), $1\frac{3}{4}$ d.; share of capital cost, 2d.; total, $6\frac{3}{4}$ d. per mile. I have reckoned that the car should last two years, and then sell for one-third its original value. You will see that the total expenditure per annum has been about £225, and this is distinctly more than my driving expenses used to be. It is unfair to novices or would-be motorists to say a car is cheap to run, although I admit

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that for a doctor who has time to give to small adjustments and has a widespread country practice it may be made cheaper than horse traction. The fallacy in these comparisons is usually that the owner is expected to give time and care to his car, and only keep a boy at a low wage, whereas for horses he is supposed to keep an experienced coachman and give no time to their management. On the other hand, much additional pleasure is given by even a small, economical car such as mine, and it is so attractive that no doubt 2,000 miles have been run in the year in my case for pleasure. ARTHUR COOKE.

The only Unfavourable Experience.

I do not care to contribute my experience, which, owing to my car having been out of order more than once since I bought it, is short and not entirely favourable. Cars are not so pleasant to use as carriages, but their speed is much greater. They are not remarkable for punctuality. The chauffeurs ought to be trained, and I should think engineers would prove the best. If a doctor will drive his own car, I should think it would be cheaper than horses. In London, owing to the slow rate of traffic, it is a question whether there is much advantage in motors. C. THEODORE WILLIAMS.

A Wider Field Available.

I have now had three years' experience of motors. I find that one is able to get away more quickly, one is less than half the time on the road, work at a distance can be undertaken which otherwise would have been refused, and the motor is more economical, costing from half to two-thirds as much as a horse and carriage. My car is cleaned and repaired by a local motor firm, and I attend to lubrication and minor adjustments, and drive myself. So far I have only used solid tyres. These are a source of confidence and economy, and there is little or no impairment of comfort at reasonable speeds. A medical man's car should have a reputation for reliability, and should be of sufficient horse power to allow of the car carrying protection from bad weather. Although I prefer the motor to the horse, there are certain points to be taken into consideration. One must be prepared for occasional delays when something has gone wrong which cannot be immediately diagnosed. Allowance must be made for the car being laid up for a day or so now and then for necessary repairs. And, as improvements are introduced, there will probably be future outlay in keeping up to date by selling the old car and buying one of a newer type.

W. L. C.

Benefits not to be Estimated in £ s. d.

I have—for a country town practice—a 10 h.p. two-cylinder car, with glass screen and removable canopy, and a single-cylinder two-seated car.

Every medical man has some special mechanical knowledge, and in a very short time—say four weeks—with a good driver-mechanic, should be able to take entire charge of his car. His groom, in less time, would learn the importance of cleaning and lubricating the car, and would gradually acquire the special knowledge necessary to keep the car running at its best.

Of course, troubles in the shape of breakages of vital parts, gear going wrong, etc. (and these things will happen occasionally on the very best cars, in spite of careful testing), would require a skilled mechanic, and if the motorist lives in the country and does not know of such a man he would be wise to get the makers to send a man down. I mention this because I have been unfortunate enough in my 10 h.p. car to have

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required five new gears in less than twelve months. On each occasion of the gear going wrong I have driven the car to the makers before the gear refused to take me there. They have just agreed to fit a sixth gear, free of expense. Foolish economy on their part, not to abandon such a type of gear. I think most engineers and motorists will admit.

With my smaller car I have had a broken piston rod, broken spring stays, worn-out gear bearings and collar clutches, in addition to minor evils of broken valves, plugs, and short-circuiting troubles. In spite of these drawbacks I have been able to get through my daily country rounds, and have had horse help on two occasions only. A medical friend, who has one similar two-seated car, has since September used his car daily, except for five days "waiting for spares."

Choice of Car. A great deal depends on the choice of a car, and my idea is that an 8 to 10-h.p. two-cylinder two-seated car (or with removable tonneau), weighing not more than 10 to 12 cwts., with removable glass screen and canopy, is the ideal type of car for a medical man's use. Of such cars there are few or none on the market made by any firm of repute. It is, I think, most important, whatever power or style of car is fixed upon, to get a car types of which have been running for at least twelve months, and the wearing parts have proved their wear by 5,000 miles work. This is a hilly country, and in flat districts doubtless a 6½ to 8-h.p. single-cylinder car of good make would serve its purpose.

Tyres. I cannot imagine medical men sanctioning any but pneumatic tyres. Though in this district the road surface is bad and the gradients severe, involving extra wear on the tyres, I have had very few puncture troubles. The wear depends, of course, on the weight of the car and its speed, and also on careful driving round corners and in the application of the brake. Makers too frequently fit tyres of the firm from whom they get favourable terms (twenty-five per cent. and more) for taking a quantity, instead of, in the true interests of motoring, advising what they know to be best. Collier tyres are, I think, the most economical in the long run. My own experience of the wear of another make has been most painful, though in justice to the firm I may say they have treated me very fairly, admitting the defective life of the covers supplied to me. Of voiturette motor covers, any but the extra fort quality will only cause annoyance.

Ignition. A thorough knowledge of ignition is necessary, and easily acquired. High-tension wires

should be of best quality, and in two-cylinder cars separately enclosed to reduce short-circuiting to a minimum. Sparking plugs of any but well-known makes should be discarded. I have had trouble through chips of broken porcelain getting into the cylinder, and (fortunately) showing their presence by getting under the exhaust valve and stopping it closing. Commutators have given me trouble—the wipe contact from (1) wearing of the blades, and (2) from the "brass contact" wearing faster than the fibre wheel, leaving a roughened surface, the blade jumping the contact at high speeds and causing misfiring. Possibly, however, there are better systems on the market.

Carburetter. It is most important to keep this clean. In spite of careful straining of petrol, "fluffy dirt" will block the gauge in carburetter and prevent a proper feed. I have had trouble from petrol getting inside copper float, making it too heavy and preventing it closing the needle valve, probably from some tiny hole in the centre tube of float.

Brakes. It is essential that every car should be provided with an efficient foot brake. This is the only brake which ought to be used in ordinary driving; the side brakes ought to be reserved for emergencies and when car is at rest. In many cars the foot brake is applied to the driving shaft immediately behind the gear box, where it gets covered with oil and is usually ineffective—at any rate, after very little wear. I have found the foot brake acting on the differential shaft most effective. Both brakes should be kept carefully adjusted, as any inequality in side brakes tends to cause side-slip, which even on our greasy roads has never given me much trouble. Careful driving is necessary, more especially when you cannot see well ahead, as on greasy roads a sudden application of the brake is courting disaster.

Cost. The comparative cost of motors and horses for medical men is frequently under-estimated. Petrol can be purchased in quantities at 1s. 2d. a gallon (and a small car will run from twenty to thirty miles on a gallon); lubricating oils cost 2s. 6d. a gallon (half a pint will carry the car thirty to fifty miles). Depreciation, cost of repairs, and wear of tyres are difficult to estimate. My own items in these respects have been very heavy indeed; but a single-cylinder car can be run more economically than two horses and a two-wheeler.

But apart from cost, the ease and speed with which a medical man can get through his country rounds, and the pleasure he derives from driving himself—benefits which cannot be estimated in £ s. d.—invigorate and give him a longer lease of life.

ERNEST MACKENZIE, M.D.



Dr. K. Vickers, Wellington, Salop

84 Miles a Day—The Work of Three Horses.

I have run a car (for a country practice) for three and a half years, and I put the cost (including everything) at about the cost of keeping one horse. The actual running expense is very small, and depends on the mileage and on the care taken of the car and of the way in which it is used.

A doctor who has work for only one horse will not run a motor car more cheaply than he will run the horse, but he will do his work much more quickly. At a time of pressure the car will run all day and every day; the horse won't. When there is slack time the car does not eat its head off in the stable as the horse does. A man who has work for more than one horse will find a car a saving in every way; the more work the more saving.

As to time saved there is no comparison; the car has it easily. The wider the district the greater the saving. I often do fifty miles a day on my car, and sometimes more, with far less fatigue than with horses. The longest day's run on professional work I have had was eighty-four miles in one day. I did this easily in eight hours, with ample time to see my patients. I should have required three horses to do the same distance, and the time occupied would have been a half more.

As regards cars being unreliable and less pleasant to use than horses, I can only say that my car is quite reliable. I have only had one involuntary stop on the road in three years. In selecting my car I had regard to the points that cause unreliability and avoided them. I use solid tyres, magneto ignition, natural water circulation, and a simple engine. I have had no trouble with any of them. I find driving a car quite as pleasant as driving a horse, and the motion is much less fatiguing than most carriages. I know nothing more unpleasant than driving a tired horse. In addition, the car is far safer and more under control than any horse.

I am not an engineer, nor do I employ an engineer, and I have driven motors for five and a half years. Except for an overhaul, which must take place at intervals, and for repairs, which are occasionally necessary, I have not employed an engineer. A lad can do all the cleaning, etc., required, with far less trouble and in much less time than he could look after one horse, trap, and harness. Anyone can learn to do the little adjustments that are necessary. I taught myself, with the help of *The Autocar* and a motor tricycle. No doubt the more a man knows about a car the better for him and for the car; but an engineer is not necessary.

My last car, now in its third season, is an 8 h.p. Argyll. I have had very little trouble with it, except

MOTORING FOR

Dr. Dawson Turner, of Edinburgh, who was one of the first, if not indeed the first, member of the Scottish medical profession to take to motoring, was unquestionably the first to announce authoritatively that motoring was most valuable as a specific for many diseases. Not only so, but having satisfied himself from his own experiences of the healthfulness of motoring, he prescribed it for consumptive patients. In a speech which he made to the members of the Scottish Automobile Club, he said that after a run of from thirty to fifty miles he found that the consumptives ate and slept better. It was desirable that the speed at which the car travelled should be up to the legal limit, so as to impart to the patient the full benefit of the strong current of air so induced. Of course, it was necessary that the patient should be well wrapped up, and that the drive should not be too prolonged. Every case, however, should be considered on its merits, but when these precautions were taken the tendency to cough was diminished.

This speech of Dr. Dawson Turner's, which was delivered some two years ago, is worth remembering, because only a few days since it was stated in the daily press that a French physician had just discovered that motoring was good for consumptives. As a motorist, Dr. Dawson Turner is a great believer in simplicity. He advocates a single cylinder with a belt drive, and chains from the countershaft to the back wheels. He looks upon ball bearings as undesirable complications.

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with breakages, which are due to the use of solid tyres on bad rough roads. I use it in all weathers and at all times, and I shall never go back to horses. I feel quite sure that any doctor who goes in for a car will never regret doing so, but care must be taken to get a good car, not a cheap one. The first cost is large, but it pays to get a good article to start with; there is less trouble and expense afterwards.

J. HUNTER.

Medical Advantages of a Two-cylinder Car.

For the past three years I have used a petrol car. Being resident in a sanatorium, some 350 feet above sea level, each time I go out there is a very good test of the hill-climbing powers of the machine before I reach home again. When I say that I have never had occasion to leave the car at the foot of the hill, it is a good testimonial to the efficiency of the motor.

My first little car was a $3\frac{1}{2}$ h.p. Benz, which, with Crypto gear, crawls any ascent I have ever met. My present 10 h.p. double-cylinder Argyll takes hills on the second speed, and mountains on the first. Regularly every Monday I do the return journey to Belfast (one hundred miles), and find it a much pleasanter and more convenient method of travelling than the railway. The ease with which a two-cylinder engine starts is perhaps for a doctor the most important element in deciding between a single and double-cylinder car. One can thus switch off the current without the dread that it may decline to start off at a critical moment, and at the same time avoid the objection to leaving an engine humming at the door of a patient, as well as an unnecessary waste of motor spirit.

I have found the Argyll people most prompt in supplying spare parts, and they are always obliging in giving information. With heavy Dunlop tyres on front and Sirdar solids on back wheels, I have run some 10,000 miles without puncture.

F. HOWARD SINCLAIR, M.D.

CONSUMPTIVES.



Dr. Dawson Turner.

THE MOTOR CAR IN COUNTRY PRACTICE.

By W. J. Gilpin, L.R.C.P. Lond., M.R.C.S. Eng.

WHATEVER MAY BE THE NECESSITY TO-DAY FOR ARGUMENT AS TO THE RELATIVE ADVANTAGES OF HORSE OR MECHANICAL CARRIAGES, OF THIS I AM SURE, THAT THE COUNTRY PRACTITIONER OF THE NEXT GENERATION WILL BE AS LITTLE LIKELY TO REVERT TO THE HORSE AS A MEANS OF LOCOMOTION, AS TO RETURN TO THE HOME-MADE DECOCTIONS, TINCTURES, AND PILLS OF HIS GRANDFATHERS.

THE vehicle we want is the one that is readiest at all times to go anywhere, in any weather, as quickly as possible, and as cheaply, for, alas! the country practitioner is by no means a man of wealth—frequently, indeed, very much the reverse—and to many such the serviceable, if humble, bicycle (which to a great extent embodies these requirements) has been a perfect godsend. The bicycle, however, has its limitations. It is a youthful, fair-weather, fine road conveyance, very useful at a pinch, but the becloaked toiler against a driving rain hardly presents the picture of professional *otium cum dignitate*.

Let it not be inferred from this that I wish to decry the value of the motor cycle in country practice; in fact many of my professional *confères* are loud in its praise, one who uses the horse, car, and cycle giving the latter the decided preference for all-round usefulness. Indeed, those who already cycle and are hesitating could not do better than make their first plunge into automobilism on a motor cycle, and so acquire a knowledge of the ailments of the petrol engine, with their symptoms and treatment, which will stand them in good stead when the time arrives, as it most assuredly will, for them to embark on the more ambitious modern motor car.

Let us now discuss, in the terms of my definition of the doctor's carriage, the question of horse *v.* motor.

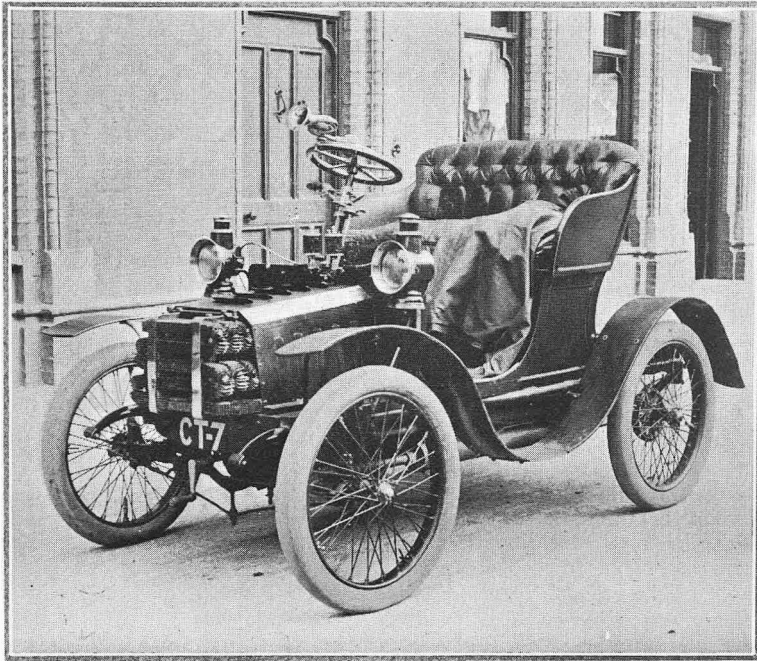
As to Readiness.

As to readiness, it requires no vivid memory to recall the peal of the night bell in the small hours of the morning, the short discussion with the messenger, and then the tedious wait until the groom has arrived, harnessed the horse, and is ready for a start (half an hour at a mild estimate), the three to five miles jog, possibly ten minutes with the patient, and then home again to bed, whilst the not-to-be-envied groom puts away the trap and stables his nag more or less perfunctorily. With the motor car, one can go and come back in the time it takes the other to start. Call to mind also those times when fortune was not so smiling, and you waited hours by that cottage bedside listening to the rain dashing against the window panes,

and pitying your unfortunate horse, and probably your groom as well, roughing it outside. Can you wonder if I almost chuckle inside my umbrella coat as I cover my seat with the macintosh and leave the elements to do their worst? Again, do you remember waking up to find the country half white, with roads like glass, and the delay that ensued till groom brought back the nag with the frost-nailed shoes, or those still worse screws that set one's teeth on edge? The hardened road brings only joy to the vitals of your car as it romps along singing a happy goodbye to the mud of yesterday. And then, when summer came, and as you drove along with the sun boring a burning lump into your back, did not your horse's lathered flanks stir pity in your sympathetic heart as you vainly tried with gentle whip lash to ease him of the torments of those infernal flies?

As to Speed.

The advantage is so one-sided as to need no words of mine. Let me merely quote two instances in which this helps. In midwifery cases at some distance from home, hours are often idled away simply because you prefer to wait rather than give your horse the inevitable journey an hour or two later. Then, again, how often do you keep going when the round is long, coming home tired to a belated meal, when, with a car, you would think nothing of the few



"The Faithful Slave."

extra miles it cost to break your round, and would gladden your wife at a punctual lunch and improve your digestion at the same time.

The Question of Cost.

Then as to cost, it would be altogether unfair to make comparison between a motor car and one horse and trap, either as to initial cost or cost of maintenance, when one considers their vastly different capacities for work, since the car will do duty for a constant relay of horses; so, the more continual the locomotion, the better the comparison for the motor car.

Shall we take, as an average country practice, a journey of from fifteen to twenty miles a day? My own works out at about seventeen, or 6,000 miles a year, and to do that requires at least two horses; in fact, two would hardly do the work, so I kept three. At first sight this looks a very poor performance for

the horseflesh, yet you will probably find that in a full morning's round the actual distance covered will not average more than ten to twelve miles; one is apt to overlook the fact that the horse is doing work and undergoing fatigue whilst the doctor is out of the trap seeing the patients. Say, then, the car is the equivalent for the trap and three horses; these with their harness, etc., would cost about £150, or about £25 less than would purchase a perfectly satisfactory car for professional work; indeed, if one does not hanker after the very latest fashion, there are many honest reliable cars to be picked up as good as when new for, say, £125, though here, of course, care is needed. The cost of maintenance of three horses, harness, carriage-work, farriery, veterinary surgeon, grooms, wages, etc., I estimate to amount to £150 per annum, or, on my annual mileage of 6,000, exactly sixpence per mile.

Comparative Maintenance.

The cost of upkeep of a car depends to a large extent on the character of the car and the cost of the man who looks after it, and to these two matters reference shall be made a little later on. In my own case, the average cost of doing for three years the whole of my professional work with a light car has been a little under £100 per annum—in other words, slightly under fourpence per mile.

In this estimate is included the cost of petrol, lubricants, paraffin, cloths and sponges for carriage-work, tyre and tube repairs, accumulator charging, replacements and repairs to working parts, and license, and also 15s. worth of manual labour per week. The next most expensive item after labour is for tyre and inner tube repairs and replacements, which up to now have averaged nearly £25 per annum, or a penny per mile, but of late, instead of wearing a cover to its last gasp and then discarding it for a new one, I have sent it earlier to one or other of the tyre repairing firms that have recently sprung into existence, with, on the whole, very satisfactory results, for they will send you back what at all events looks like a new tyre for just about one-fourth the prime cost of one, and, if it does wear at all, will wear quite as well, or even better, than the original article; but—and there are always “buts”—sometimes your beautifully renovated tyre will go off with a bang in the first twenty-five miles, showing a rent four or five inches long, due to the fact that in vulcanising the rubber the lining fabric has been made rotten. However, the repairing firms are now aware of this, and no doubt will obviate it; one firm, in fact, will, so they say, actually entirely remake and reline the cover, and this they do at about a quarter the cost of the original tyre. If such is the case, one would imagine they could make a new one for very little more money, and is justified in thinking that the expiration of the patent will mean a very considerable reduction in the tyre bill.

The next largest item is for petrol, or rather motor spirit, which, calculated at 1s. 4d. per gallon, costs £18 10s. per annum. Next come the cost of replacements and repairs to working parts, which have averaged just under £10 per annum, and, with the exception of one faulty part which was replaced by the makers without cost, have all been the result of actual wear and tear.

Accidents, *absit omen!* there have been none except a little damage to the gills of the radiators, when a baker's cart ran into me. It would not be just, however, to leave this item without stipulating for an intelligent interest on the part of the motorist, which,

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coupled with the aid of the local engineer, or blacksmith even, will do wonders in reducing the size of the repair account. The other items of lubricants, cleaning material, etc., which go to make up the total need no comment.

Comparative Depreciation.

Under the heading of cost, we must, of course, include depreciation. No one who has had much experience of horseflesh in country practice will deny that £5 per annum per horse is an extremely moderate sum to allow as depreciation after a year's work. For the three horses and the trap—from which also we must deduct a like amount—the depreciation at the end of three years would be £60, which would reduce the capital invested from £150 to £90. On the other hand, most motorists will probably say that in the case of a small car of a good make, carefully used and kept, an annual depreciation of thirty per cent. is more than sufficient. At that rate, at the end of the three years, our £175 car would be worth just about £52—a price that would ensure plenty of customers.

Revert now to the difference of upkeep previously considered—which will be somewhat over twopence per mile—and at the three years' end you have as the result £150 to console you for the old iron price of £52 for your car; put the two together, and with it you can purchase a new one, and have also what our racing friend would call a “pony” to spare.

On these figures there seems to be the substantial balance of £112 in favour of the car; but figures, they say, can be made to prove anything, so let us get away from them. And so I would but for the contemptuous comment that my fancy hears—“getting his car properly attended to for 15s. a week”! Well, get your “experienced” man at 35s., let him take entire charge of the car, and drive you everywhere. You will then have swallowed up my nice little balance of £150, and later on will probably find out that your other expenses by no means compare with mine; but do not then shower reproach on me, for here and now I wash my hands of all responsibility.

Motor Management.

The groom who can be confidently trusted with the entire care of your horses belongs to a rare species. When you get him he is a treasure, and his master will probably be one of the last converts to automobilism. On the other hand, it is the incompetence of the groom, coupled with the almost absolute ignorance of horseflesh on the part of the master, that has goaded so many practitioners into turning to the motor car as the lesser of the two evils. Unhappily, they knew nothing about horses, and did not trouble to learn, but when they turn to mechanical traction let me entreat them not to repeat the error.

The physiology of the petrol engine (steam cars I know nothing of, and, therefore, say nothing either for or against) is so easily learnt, as is also the surface anatomy (when it comes to deep dissection, the less you have to do the better for you). Acquire this knowledge, therefore, beforehand, and when you purchase your car engage from the makers or sellers a competent man to drive you home and stop with you for a day or two, whilst you learn from him the proper driving and control of the car, and give him an extra golden piece to demonstrate to you the working of all the vital and reasonably get-at-able parts. Add to this the weekly study of your *Autocar*, and you need have little fear that your training in diagnosis will enable you to apply the proper treatment to the ailments that may appear—

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treatment so prompt and effective in its action as to be in happy contrast with some of those medical cases that you wot of. You do not want, nor can you afford, the skilled engineer-chauffeur any more than you would a veterinary surgeon for your groom. Engage an intelligent young fellow who knows how to clean carriage-work, show him where to fill up with water, petrol, and oil, point out to him the grease caps he has to give a turn at every time he cleans the car, and then the motor house will not of necessity demand much of your time. When little adjustments, etc., are needed make them yourself at first, whilst you explain to the man what you are doing, and why. In a month or two it will probably occur to you what an excellent value he is for about £1 a week, more especially as from that you may deduct 5s. or 6s. weekly as representing his work in knife and boot cleaning, gardening, and so on.

The Doctor's Car.

What sort of a car can be called a doctor's car? In the first place, if economy is to be considered, it must be a two-seated car, or easily convertible into such, and as such it must be used during the winter season, when going is bad from mud or metal. The car I use for professional work has a removable tonneau, but it has only been on one day since last September, when it was used for electioneering purposes. True, I have another, but that is a luxury, and is used as such. Every additional hundredweight, not to say stone, makes a difference to the life of the tyres, to say nothing of the mechanism. It follows, therefore, that the car should be as light as possible in conjunction with plenty of strength. American runabouts would be of no use in country practice; take 8 cwts. as somewhere about the mark. The tyres should be pneumatic, and as big as the rim will take—85 mm., if possible, for the 8 cwts. car. The extra cost of the larger tyres will be amply repaid by lengthened life. It is extremely doubtful if solid tyres, in the long run, are more economical than pneumatic. Their only claim is immunity from puncture, and it has been my experience that punctures that seriously interfere with the round have been very few and far between. The majority of such are slight, and one or possibly two turns at the pump will see your round out and you comfortably home, or, if it is a bad one, you can sit on the other side of the car and travel gently home; you are never far from your base, and the tyre will not suffer much if it is only big enough. *Nota bene.*—The foregoing remarks apply only to tyres kept in fair condition; if one will trust one's self on "crocky" tyres, one must take the consequences.

Hoods and glass screens are a delusion; the hood will not keep off the rain without the screen, and the screen cannot be used in the rain, because you cannot see through it. True, the hood is useful in dry weather to stop some of the dust, but a couple of sockets, one on each side of the back of the car, to take the ends of a light iron rod bent somewhat in the shape of a large Elizabethan collar, and draped with a piece of holland, will be much more effectual.

The upholstery should be pegamoid, not a cheap imitation. The true article is very durable, and has the great advantage over leather that it is impervious to wet. If it is wet, wipe it, and it is dry; if it is muddy, wash it and dry it—you can sit down at once.

For medical practice, it is doubtful if bucket seats are desirable; without them you have more freedom of movement, and under the cushion you have greater length for such things as splints, umbrella coats, etc. It

goes without saying that there must be some receptacle capable of taking an instrument case or obstetric bag.

The Engine and Mechanism.

So much for the carriage part; now as to the machinery. Honeycomb radiators are not desirable; they possess no practical advantage, whilst they lack the robustness of constitution of the older method of tubes and flanges.

The engine should be of quite 6 h.p., and one that will, after running at any rate, always start at the first turn of the handle, and that handle should be a fixture. The medical man is constantly stopping and starting, and it is quite a nuisance to have to fetch and affix the handle every time one starts the car.

Two cylinders, of course, are much to be preferred to the single one. Extra complication there may be, but it does not manifest itself much in practice; in fact, the comparison one is able to make between the two cylinders is a great help in keeping them both at concert pitch.

Unfortunately, two-cylinder cars cost more money, and there is to my knowledge only one firm offering a two-cylinder car at our price. I know nothing more of it than can be learnt from the specification and the view of the chassis at a recent show, but it seems about the type of a doctor's car.

The method of drive lies between chains and the bevel gear with live axles. In his recent paper (*The Autocar*, April 30th), Mr. Mervyn O'Gorman claims sixty-nine per cent. of efficiency for the bevel gear as against fifty-eight and a half per cent. for the side chain (Panhard type), but, then, earlier in the paper he dubs the former fashion as having "received the order of the right about turn."

Without any engineering knowledge, and apart from Mr. O'Gorman's figures, it seems to me that immunity from mud and dust and the absence of reaching gives the bevel gear drive a certain preference over chains on the doctor's car.

Side chains or bevel gear, engine horizontal or vertical, noise or no noise, give me the motor car! When I think of the capacity for work, when I think of the winter assistant now dispensed with, when I know that the monotony of the daily drive is now pregnant with interest, when night work is almost a pleasure—write me down enthusiast. And so will you be!



Dr. George B. Batten drives a Duryea Power phaeton, and also employs a 6 h.p. De Dion occasionally, this car being obtained from a local firm of engineers whenever required, a retaining fee being paid for this service. The cars save one hour in four, and in the matter of long rounds the saving in time is far greater. The total cost is rather more than two horses, but the work accomplished is nearly equal to that of four horses.

MOTORING FOR METROPOLITAN MEDICOS.

By W. E. C. Musson, M.R.C.S., L.R.C.P.

THIS ARTICLE IS WRITTEN BY ONE WHO WAS AMONG THE FIRST MEDICAL PRACTITIONERS IN LONDON TO ADOPT THE MOTOR CAR. IT TAKES AN IMPARTIAL VIEW OF THE SUBJECT, AND PLAINLY SETS FORTH THE ADVANTAGES, WHILE NOT DISGUIISING ANY DRAWBACKS OF THE MOTOR.

SO wide is the subject that the editor has asked me to handle that it would find ample work for more than a single pen. My country colleague has a simpler task, for the transport needs of country practice are fairly constant, the only variety being in the distances to be covered and the proportion of bad roads to good. London practices differ much more largely in their character and requirements, ranging from the work of the consultant, who, after a morning spent in receiving patients, is driven as rapidly as possible to his hospital or a few serious cases, to that of the general practitioner, whose day, except for short periods morning and evening, is spent in moving from house to house, making, as a rule, many stops in a small area. There are other town practices, like my own, which for various reasons straggle over areas nearly as wide as those covered by an average country doctor, without necessarily being very large as regards the number of patients. Widely as they differ, however, I think there can be no doubt that where any means of transport other than public conveyances and the practitioner's own legs are needed or desired, a motor car can be made to do the work much more efficiently, and, to some extent, more economically than the horse-drawn vehicle.

Taking mere economy, many people would be surprised to know what a number of good London practices are worked entirely without private conveyance. Trams, trains, and omnibuses so thoroughly cover London that a very small amount of walking will enable a doctor to cover a great deal of ground with their aid alone, while the occasional hire of cab or brougham will get him out of emergencies without largely adding to the cost.

Appearances.

The only objections to this mode of working a practice are a certain loss of comfort and speed, and the absence of that most important fetish of the British patient—"appearances"—with the added difficulty of finding night transport; though the bicycle—by no means an ideal conveyance for a doctor during the crowded daytime gets over the night difficulty without offending the most susceptible souls who think it *infra dig.* in the daylight. Very many really good practices are worked in this way, and, as regards mere cost, it is probably the cheapest of all; but it is impossible to find out how much is lost by the neglect of "appearances," even in the profession which does not advertise.

At present it is doubtful if the motor has any advantage in the public eye in the matter of appearance, as, although there are many who have reaped the benefit of rapid transit in times of emergency, it is probable that they are, up to the present, in no very large majority over those who detest the motor and all its works, and it is unfortunately from such people, nervous invalids and old women, of both sexes, that some of the most profitable patients are recruited. And it would not be right to treat these people merely with ridicule, for many of them, nervous and entirely ignorant of motors and their control, have imagined themselves in deadly peril from even considerably-

driven cars; while a very few have, one cannot help admitting, been really endangered by the reckless or ignorant driving of the very small minority, whose misdeeds do more harm to the cause of motoring in a few isolated moments than years of hard work and careful consideration for others, as shown by the great majority, can undo.

It is only fair to recognise that these perils, imaginary or truly imminent, seem very real alike to the nervous and the old; and it behoves all motorists alike to be satisfied with their driving only when they can say that not only do they never drive so as to endanger anyone, but that they never give even the most nervous the smallest ground for imagining they are in danger. If all would strive after this high ideal, there would only remain the dust nuisance as a barrier against perfect acceptance of the motor by all.

No Comparison.

If we set on one side the questions of appearances and an extreme economy, which, often impossible, demands at best a very strong constitution and much disregard of personal discomfort, and look into the matter from the point of view of efficiency, there is no comparison between the modern motor car and any other means of traversing the streets of a great city. It is ready at a moment's notice, is untiring, speedy, and safer than any other vehicle, both to its owner and other users of the highway, while it can be left unattended in the street with perfect safety to the public, and, following recent magisterial decisions, without fear of future inconvenience or pecuniary damage to its owner. These qualities alone must eventually compel every hard-worked general practitioner to use the car, even should Harley Street, in part, retain the brougham and pair.

As regards absolute cost, some years ago I went very fully into the comparative cost of keeping a motor car as compared with a dogcart or brougham and a single horse. I have not the actual figures at the present moment, and I do not think they would be particularly interesting reading if I had, but the conclusion that was arrived at was that the motor man's wage, as compared with the coachman's, was the important factor, *i.e.*, if a motor mechanic were not kept and a sum of £12 per annum was allowed for cleaning, the owner driving himself, the cost was £30 to £40 per annum less than that of single horse and brougham, with the then necessary coachman; while if a motor man were kept the wages of the skilled mechanic might easily exceed those of the coachman by more than the sum named, thereby making the car by so much the more expensive vehicle. These calculations were on the basis of an average mileage of seventy miles a week, and there an obvious fault occurs at once in the comparative cost, as no car owner limits himself to the merely necessary, and the car is certain to be asked to cover many more miles than could be got out of any horse.

In another factor I was unfair to the car, as, making the calculations for my own personal use, I reckoned that in either case it would be necessary to take the

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only available stable and coach-house at a rental of £20 a year. Since becoming the owner of a car, I have built a brick motor house on my garden, and the interest on capital expended does not amount to a quarter of the rent named. I do not keep a driver, and look to all minor adjustments myself. Chiefly to avoid damp in the motor house, I do not have the car washed at home, but at the repair shop of a patient, where it is thoroughly and inexpensively carried out, and in a very short time. *Apropos* of this, I find it by no means needful to have a car washed every day or anything like so often; and yet, except in very muddy weather, mine is always fairly smart and tidy. In very bad and dirty weather I reason that, in any case, the lower part of the car would be filthy in ten minutes, so it is hardly worth while to strive at the unattainable, and I let it go a few days without any of the fearful effects on paint which I have seen ascribed to neglect of this kind. And here I will cite a case that came under my notice the other day. A motorist took his car out in the morning and drove his wife shopping from 11 to 12.30, told his man (a groom) to clean it, drove again after lunch for a couple of hours, man cleaned it, finishing about 6, and received orders to bring it round at 8 a.m., as his master was going for a long country run. At 7 a.m. the man arrived at his work to find that the car had again been used, and was one mass of mud, and got into hot water because he was a little late in bringing the car round. He heard by chance that his master had taken the car to run half a mile to chat with a friend, and had volunteered to drive some fellow guests home—a distance of four miles. This happened when half a mile smothered a car with mud splashes, and the man, who has a pony to look after as well, said: "I like cars—they're 'andier than 'orses—but the guvnor wouldn't never have turned an 'orse out after dinner to go 'arf a mile." He was a mild man and respectful, but I was surprised at his moderation, and wished that I could get his master to clean a car just once when it was properly dirty.

Economy and Efficiency.

As regards economy then, the conclusion I have arrived at in my own case is this: Driving myself, and keeping no out-door servant but a house boy, I save about £35 or £40 per annum as against one horse, but really more than that, as there are frequent periods when one horse would be unable to do my work. As regards efficiency there can be no question. The telephone gives an urgent call, and in five minutes I am travelling twenty miles an hour, so that it matters little whether the patient be distant one mile or five. In close traffic it is impossible to achieve, and wrong to attempt, high speed, but, even with the greatest consideration for others, a general average higher than that of any other vehicle can be easily maintained.

As regards reliability, my own car has been on the road since August, 1902, and has never failed to bring her load home yet. This, of course, is in strong contrast to the cars of early days, when we spent more time in attending to the vitals of the car than on the driving seat, but is now the rule and not the exception. Oh, those early cars and the woes, and at the same time the pride and skill in ultimate success that they engendered! I could tell anecdotes interminable about their tricks, and at the risk of the editorial blue pencil must permit myself one. In the early days I was driving an old lady of very weak intellect in a little two-seated belt-driven voiturée. It rejoiced in an automatic carburetter, placed in a position the most inacces-

sible. That carburetter had three minute spray holes and a cork float. A speck off the float in only one of those spray holes gave that carburetter the efficiency of a Jarrett in stopping the car. In a muddy lane, with a lovely blue sky overhead, the inevitable happened, and I found the available tools were a screwdriver too large for the screws, and a shifting spanner whose jaws shifted anywhere except parallel—an hour's work in the mud—but my old lady was quite comfortable; she enjoyed the view, and, at intervals of about three minutes, remarked, "I do call this such a charming way of getting about; if I were a younger woman I would buy one of these things and drive it myself." To this day I am doubtful whether it was the senseless repetition of the insane or deliberate sarcasm of a lucid interval.

The Tyre Difficulty Overcome.

These experiences, fortunately, belong almost entirely to the past, and even tyre troubles are infrequent. One reads occasionally the advice to people whose neighbourhood is hilly or rough not to have pneumatic tyres. To my mind there is no worse advice



Dr. Bickerton, a West End practitioner who has for some time past used his car to very great advantage.

ever given. My car weighs 11 cwt., and has 3½ in. tyres, and the front tyres were put on in August, 1902, and have never been opened since the day they were put on. One back tyre was ruined through the valve spigot coming out, while the other, retreaded, is still on the car. Can any solid show better results than these? The whole secret is in having extra large and strong tyres at first. Over-tyre your car and you will never regret it.

Choice of Car.

And now just a few hints as to the choice of a car for medical work. For the elderly consultant with a bottomless pocket the electric brougham is a comfortable and imposing equipage; but, as long as accumulators weigh what they do at present, the pocket should be bottomless indeed, for the tyre bill will be awful, and the life of the carriage not a long one. Steam cars are very sweet to drive but expensive to run, and comparatively unhandy to start, so that up to the present

the petrol car with an internal combustion engine is by far the most desirable. It is hardly behind the steam or electric car in sweetness or flexibility, and, in handiness, economy, and reliability, a long way ahead of either, while any form of body can be obtained, price being the only limit of comfort or luxury. The elderly practitioner can have his comfortable brougham readily convertible at will into an open carriage, the younger and hardier a canopy with glass front, which can be detached in ten minutes single-handed, and left hanging in the motor house, and this is the most generally useful type. For the practitioner whose means are small there is the small runabout, which at very small cost can be fitted with glass front and hood. For those who really use their cars some cover is indispensable in the interest of owner and car alike. So much for the carriage. For the machine I would strongly recommend any doctor to stretch a point in the matter of cost and get a car with at least two cylinders. He will find his recompense in the flexibility and control so necessary in threading the maze of London traffic and in the greater quiet of his engine, while, should his means permit, a four-cylinder engine will give him absolute luxury and almost dangerous silence. Put into £ s. d., this means that a doctor can get value for money for any sum from about £120 to £600, the happy though costly medium being from £200 to £350.

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The passion for horsetlesh was too firmly rooted in youth to permit me to work up any sentimental interest in the motor, but, in spite of all the woes and discomforts of the early days, I have been compelled to admit the superiority of the machine in most respects, and in one—important to myself—in particular. It may sound far-fetched, but there is appreciably more exercise in driving a motor car than a horse, and I am absolutely sure that I keep in better condition in consequence of the change, while it must be obvious to everyone that the ultimate almost total removal of the horse from the streets of a great city will be for the good of anyone rather than the doctors. Perhaps I should have left out this dubious advantage, but our disinterested aim has always been to take the bread out of our own mouths; witness the present medical (or newspaper?) crusade against the insanitary pigeon of our public buildings. The pigeon might be left until the horses are thinned out a little. For the information of future medical motorists, I can only add that the car whose character I have given above is an 11 b.h.p. Clément, of the type which is now known as Talbot in England, Bayard in France. There are others as good, but, as far as my experience goes, none better price for price. One omission I have made, and that is that I prefer a gear-driven car in most cases as being generally lighter, and doing away with chain troubles.



Dr. Fitzgerald at the source of the Kowie River, Belmont Valley, S.A. He uses a 10 h.p. Star car with every satisfaction, despite the rough and hilly nature of the ground covered.

A crusade against motorists is reported to be taking shape in Cheshire, where large numbers of cars are attracted by the excellent roads. Complaints are said to be made of the dust raised, but we should like to know what grounds exist for the statement in a half-penny morning paper that the experiment of using oil instead of water on the roads for laying the dust has proved a failure, and that the local authorities are at their wit's end to find a remedy. This, we should imagine, is fiction paid for at the rate of a penny a line.

A question as to the legal weight of a motor waggon came before the Penrith magistrates the other day, but owing to the bench being equally divided no decision was arrived at. The waggon in question was a Straker steamer, and the point at issue was whether, in calculating its weight for purposes of registration as a light locomotive, the weight of the boiler should be ignored, Mr. Sydney Straker, the designer, contending that the boiler of a steam vehicle was equivalent to the accumulator of an electric vehicle.

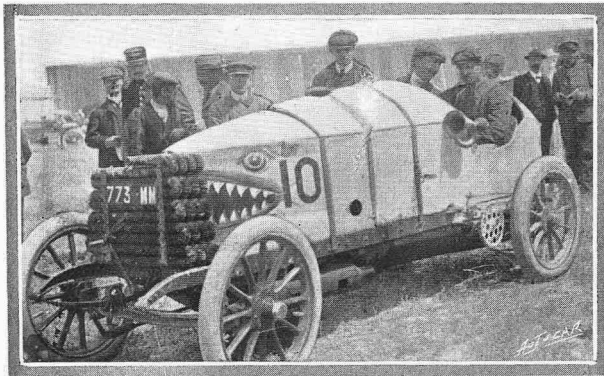
CONTINENTAL NOTES AND NEWS.

The French Race to Select the Gordon-Bennett Cars.

The trials for the choice of the French team to attack the Gordon-Bennett Cup took place on Friday, the 20th inst. They passed off almost without incident, thanks to the good arrangements made by the A.C.F. all along the course. As it will be seen further on, the winner of the race was Théry on a Georges-Richard-Brasier—an 85 h.p. car—which covered the 325 miles in 5h. 20m. 28s. After deducting the time spent in the neutralised areas, the average speed works out at 99 kilometres 416 metres an hour, or about sixty-one and a half miles an hour. Such are the bald facts of what was a great automobile event—the greatest in the French 1904 season, and one upon which much money

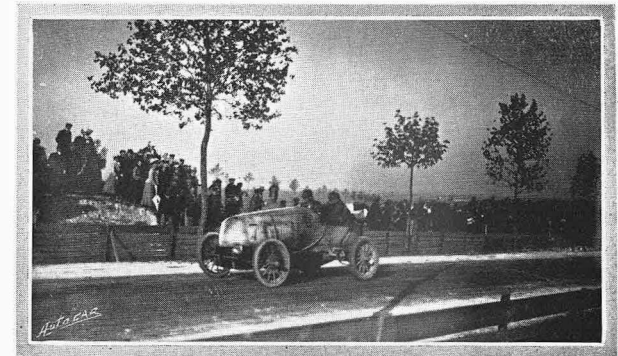
Rougier have come out winners, for they are the three who will represent France in the Gordon-Bennett Cup race on the Taunus course on the 17th of next month.

Théry, the winner, is a veteran racer, but has hitherto driven Decauville light cars, on which he has made more than one record, although he has been somewhat unfortunate in the long races. He has just finished his military service, which has taken him away from automobile racing, and this decisive victory on the Georges-Richard-Brasier car is his first great success. The car which he so successfully steered to victory weighs 972 kilograms.—that is to say, a few pounds over 19 cwts. The motor gives 85 h.p. on the brake, and is exactly the



Rougier's weird-looking Turcat-Méry which gained the third place.

has been spent, much work has been accomplished, and on which so many hopes have been based. Those who witnessed the race could see as soon as Théry came round for the first time that he was a formidable competitor, and was fast drawing away from the others, and at the second turn round he became a probable winner. Not an accident or incident of any kind occurred during Théry's terrific rush six times round the course, and his car (which is of a very elegant shape and gives the idea of speed) passed time after time in front of the spectators, literally devouring the road and filling everyone with surprise and admiration. Further on we shall give the story of the trials in which Théry, Salleron, and

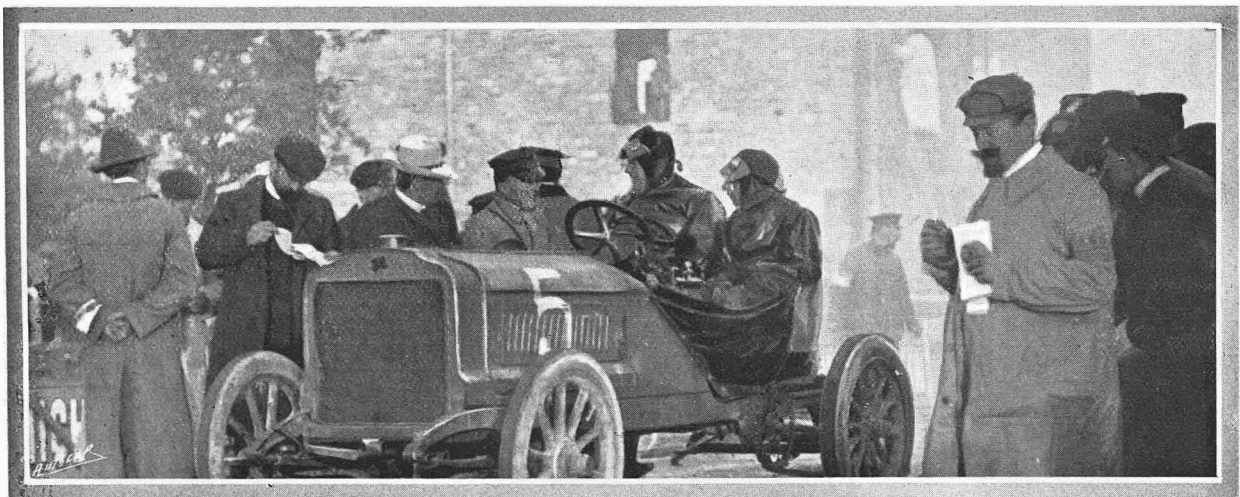


Salleron, the second man in the French team, going at full speed on the Mors.

same as that by which the famous Georges-Richard motor launch, "Trefle-a-Quatre," was propelled at the Monaco regatta. The car, strictly speaking, is not a racing car. It is very similar to the ordinary touring car sold by this firm, except that it is driven by chains instead of a live axle. The ignition is by magneto, and the engine is similar to the 1904 model Georges-Richard cars, only of larger dimensions. The car lies low, and has the radiator in front, with a fan behind it.

The Start.

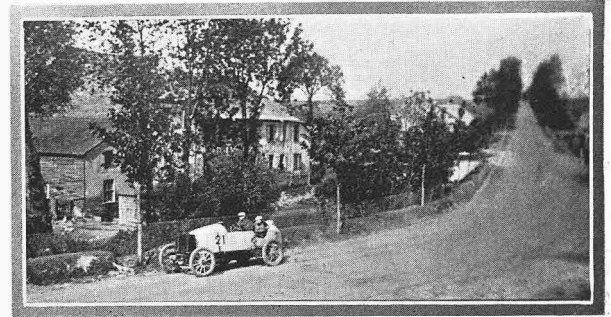
The start took place at the cross roads of Mazagran, situated on a high land in the midst of an uninteresting



M. Théry, the winner of the trials, at the starting point, on his Georges Richard-Brasier car.

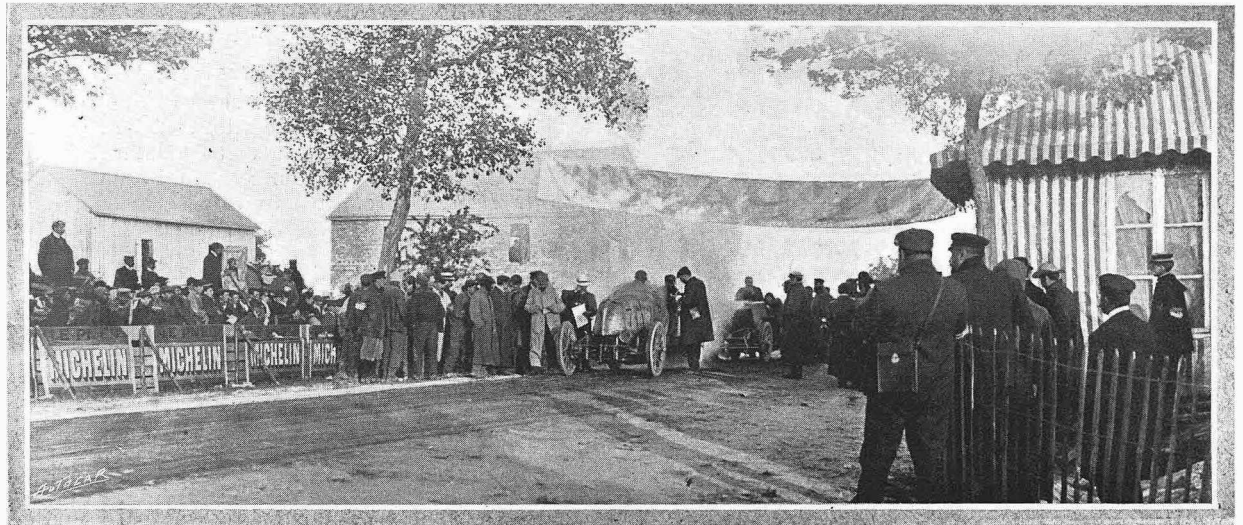
country, which is rather flat than otherwise, and is entirely given up to agriculture, and almost devoid of habitations. Many thousands of people lined the roads on both sides, and in the grandstand which had been set up by the A.C.F. well-known sportsmen from the four corners of France, and even from abroad, met together in great throngs to witness the start. The sight soon after sunrise was most picturesque. On all sides there were tents and depots of various competitors or spectators, and hundreds of horsedrawn vehicles and still more self-propelled vehicles were arriving with visitors brought by the special trains from all directions.

Amongst the spectators in the A.C.F. stand there were to be seen the Baron Van Zuylen, the Marquis of Chasseloup-Loubat, Count Sierpstorff (in whose hands the complete organisation of the Gordon-Bennett race in the Taunus has been placed), Henri Meunier, Count de la Vallette, Quinonès de Léon (attache at the Spanish Embassy in Paris), the Baron Henri de Rothschild, M. Archdeacon, M. Benet (of the Hotchkiss Co.), the Michelin brothers, Castillon de Saint-Victor, the Baron de Turckheim (of the De Dietrich firm), M. Léon Ser-



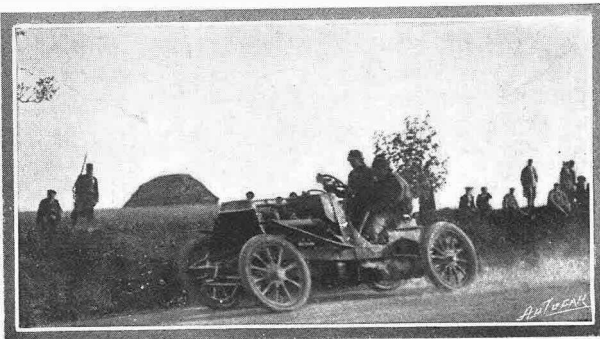
Jarratt passing through Biermes.

As the time for the start approached, the crowd increased and the interest heightened. The twenty-nine racing cars were arranged in a line down the course below the start in Indian file, with all the motors standing and not making a sound in the bright sunlight of the early morning. The weather was intensely cold, for fleecy clouds prevented the sun's rays from warming the air, and a chill wind was blowing from the west. The



Scene at the starting point of the French Eliminating Trials.

poller, General Brugère (chief of the French Army), M. Julien Cuenod (managing director of Georges-Richard's), M. Brasier (the famous engineer of the same firm), De Knyff (of Panhard's), Huillier (of Mors concern), M. Clément (the father of the driver of the No. 3 car), the Marquis De Dion, and a host of others too numerous to mention.



One of the Panhards in full flight.

drivers of the different cars were all busy giving the last final touch to their motors, and looking round to see that everything was in good working order.

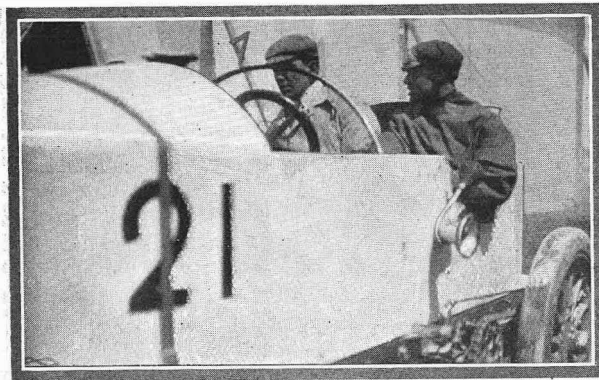
Five o'clock was nearing, and a solemn silence settled around the starting-post, where M. Tampier, the official timekeeper, surrounded by the members of the racing committee and the owners of the various cars, waited with watch in hand to give the signal to No. 1—a De Dietrich car, driven by the Baron de Forest. One turn of the handle, and the motor is at work. "One—two—three," Tampier waves his hand, and gives the word "*Partez!*" and the first car is lost to view over the top of the hill. The twenty-nine competitors left in the following order, two minutes being allowed between each of them:

1. Baron de Forest (De Dietrich), 5.0.
2. Baras (Darracq), 5.2.
3. A. Clément (Bayard-Clément), 5.4.
4. De Crawhez (Hotchkiss), 5.6.
5. L. Thery (Georges-Richard-Brasier), 5.8.
6. Le Blon (Gardner-Serpollet), 5.10.
7. Salleron (Mors), 5.12.
8. H. Farman (Panhard and Levassor), 5.14.
9. Rigolly (Gobron-Brillie), 5.16.

Continental Notes and News.

10. H. Rougier (Turcat-Mery), 5.18.
11. Gabriel (De Dietrich), 5.20.
12. Beconnais (Darracq), 5.22.
13. Hanriot (Bayard-Clement), 5.24.
14. Achilles Fournier (Hotchkiss), 5.26.
15. Caillois (Georges-Richard-Brasier), 5.28.
16. Chanliaud (Gardner-Serpollet), 5.30.
17. A. Leger (Mors), 5.32.
18. Teste (Panhard and Levassor), 5.34.
19. Duray (Gobron-Brillie), 5.36.
20. De la Touloubre (Turcat-Mery), 5.38.
21. Chas. Jarrott (De Dietrich), 5.40.
22. Wagner (Darracq), 5.42.
23. Guders (Bayard-Clement), 5.44.
24. Amblard (Hotchkiss), 5.46.
25. Stead (Georges-Richard-Brasier), 5.48.
26. Pelser (Gardner-Serpollet), 5.50.
27. Lavergne (Mors), 5.52.
28. Tart (Panhard and Levassor), 5.54.
29. Alexander Burton (Gobron-Brillie), 5.56.

There was no lull in the excitement, for only half an hour intervened between the starting of the last car and the arrival of the first one after the completion of its first turn, and so on all through the day from five



A study in perspective. Mr. Charles Jarrott at the wheel of the De Dietrich car which he drove through the trials.

o'clock in the morning until nearly four o'clock in the afternoon. There was a continual rushing past, with very few incidents to break the monotony, only each turn thinned the ranks of the competitors. Already in the first turn round four cars were short. In the second five cars dropped out. In the third three gave up. In the fourth five were missing, and the fifth turn still reduced the ranks of the competitors by one, as also did the sixth turn, leaving only ten cars out of twenty-nine to complete the race and to be classed. The following is a list of the results of the six laps:

FIRST ROUND.	
De Forest	6.26
A. Clement	6.28
Thery	6.31
Salleron	6.33
Farman	6.37
Le Blon	6.45
Rougier	6.46
Gabriel	6.48
Caillois	6.56
Leger	7.5
Chanliaud	7.8
Beconnais	7.10
Teste	7.15

SECOND ROUND.	
Thery	7.50
A. Clement	7.50.30
De Forest	7.56
Farman	7.57
Salleron	8.2
Gabriel	8.8
Rougier	8.13
Le Blon	8.19
Leger	8.28
Caillois	8.38

THIRD ROUND.	
Thery	9.6
Farman	9.21
Gabriel	9.34
Salleron	9.35
Clement	9.39
Rougier	9.40
De Forest	9.45
Le Blon	9.54
Caillois	9.58

FOURTH ROUND.	
Thery	10.32.30
Salleron	10.59
Gabriel	11.9
Rougier	11.11
Farman	11.23
Le Blon	11.29

FIFTH ROUND.	
Thery	11.55
Salleron	12.28
Rougier	12.36
Gabriel	12.45
Farman	12.55
Le Blon	1.6

SIXTH ROUND.	
Thery	1.22.28
Salleron	1.50
Rougier	2.6.5
Gabriel	2.25
Le Blon	2.35

THIRD ROUND.	
Amblard	10.21
Teste	10.26
Jarrott	10.42
Beconnais	10.6
Stead	10.51
Pelser	11.11
De la Touloubre	12.25
Leger	2.15

FOURTH ROUND.	
Caillois	11.30
Teste	11.51
Jarrott	12.10
Stead	12.20
Clement	12.26
Pelser	12.58

FIFTH ROUND.	
Caillois	1.16
Clement	1.51
Teste	2.4
Jarrott	2.14
Pelser	2.36

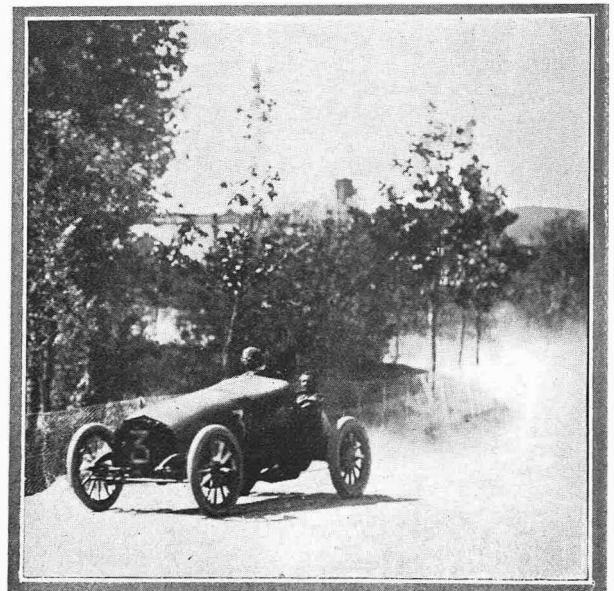
SIXTH ROUND.	
Caillois	2.56
Farman	3.13
Clement	3.24
Teste	3.35
Pelser	

On the Road.

All along the circuit on both sides of the road there were great crowds lining the barriers. The roads were perfectly kept by 5,000 soldiers, who had been arranged along the whole length of the course on each side, and who had strict orders to let no one pass on any consideration whatever. They kept textually to these orders, and the road was absolutely deserted from one end to the other. Wherever there were any houses in the proximity of the road, wire fences were put up to prevent animals breaking through, and orders had been given for all domestic animals of every kind to be shut up, and they were rigorously respected; there was not a dog or a cat or a hen to be seen in any direction.

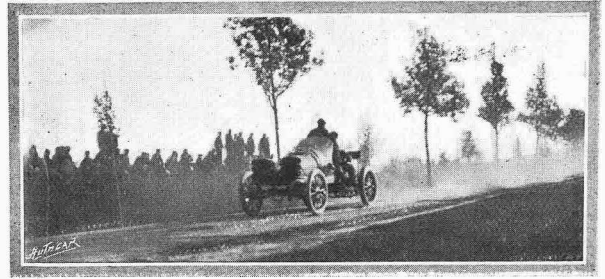
In the Controls.

In the different controls there were still larger crowds of people. It will be remembered that there were four



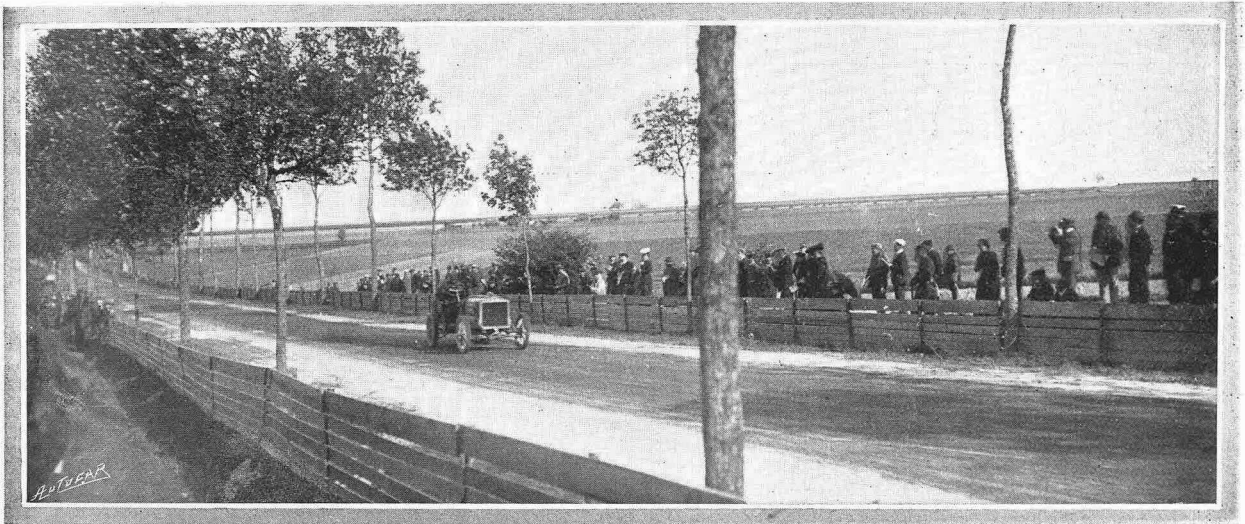
Clement running through Biermes.

neutralised areas, namely, Vouziers with a stop of ten minutes, Rethel with a similar stop, Le Chesne with a stop of five minutes, and Novy Chevières with a stop of half a minute at the level crossing. In these controls there was great excitement and continual movement, for as the competitors arrived they took advantage of the few minutes' stop to regulate their motors and effect quick repairs. Not a minute was lost by driver or mechanic, but all displayed a feverish excitement, growing continually as the day went on and the distance left to accomplish became shorter. The competitors passed through the controls slowly, each one preceded by a military cyclist, and the uniform was of great importance here, for no one dared to press the cyclists, and there was no trouble on this point. No competitor was allowed to pass another in any control, and instant disqualification would have been the penalty of any infringement of the rules. On arriving at a control the timekeeper gave the cyclist a stop-watch, and started it as he gave it to him, then the cyclist



Le Blon near Rethel.

petitor to start. Take, for instance, Vouziers, in the case of a competing car which arrived at ten minutes past ten; the town was crossed in about eight minutes, so that the other control was reached at 10.18. The competitor, therefore, had two minutes to wait, and as soon as the watch marked the hour of 10.20 he was free to start.



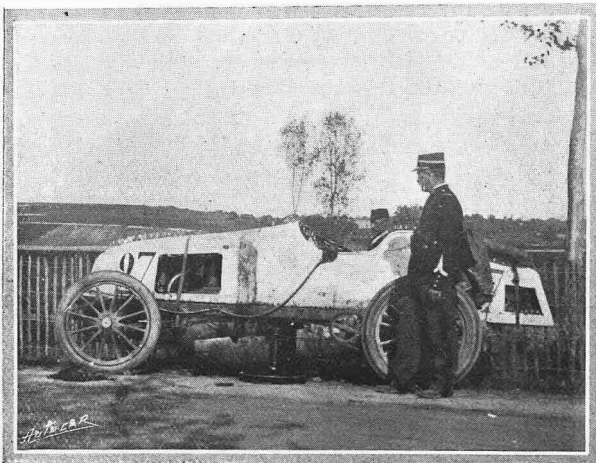
This illustration depicts the methods employed for barricading the roadside at places where spectators were likely to assemble. Caillois on a Georges-Richard-Brasier is seen coming down the road, which gives an excellent idea of the average course.

handed this stop-watch to the timekeeper at the other end of the neutralised area, and as soon as this watch reached the fixed time of five minutes or ten minutes, as the case might be, the signal was given to the com-

Incidents of the Race.

Everybody is unanimous in praising the organisers of the race, who, profiting by earlier experiences, carried it through without the slightest accident to life or limb. Not only did all the competitors come through the test almost without a scratch to either a driver or a mechanic, but not a single spectator ran the slightest danger, and this shows that in future it will be possible to organise automobile road races in which there will be no more danger than there is at any ordinary horse race meeting. Now, it is clearly to be seen that the spectators can be made to respect severe regulations, and the drivers had not even to complain that any man, woman, child, or even the smallest dog or domestic animal crossed the road and caused them a moment's anxiety, and none of the unfortunate accidents which occurred in the Paris-Madrid race are again to be feared.

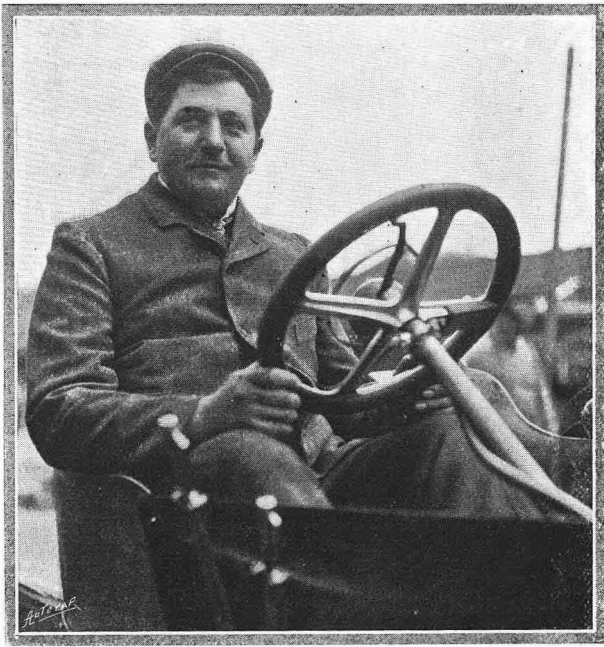
The first incident of the day was the case of Achille Fournier, who, at the turn in the road at Saulces-Monclin, about two kilometres from Novy-Chevières, missed his turn at full speed, and went out of the road into a field of turnips. Neither he nor his mechanic sustained the slightest injury, and this was principally due to the fact that the ditch at the dangerous side of



Lavergne damaged car at La Providence.

Continental Notes and News.

the turning had been filled up. Baras, just as he was about to complete his first turn round, was the victim of a burst tyre. He was coming out of Rethel when the burst occurred, and his wheel broke into splinters, and he was obliged to give up the race. A similar accident occurred to Chanlaud on his Serpollet just as he was within a hundred yards of finishing his second round. Amblard on a Hotchkiss completed his first, second, and third rounds, and from starting twenty-fourth got up as far as tenth, but on his fourth round, after leaving Vouziers, and when taking a turn, his back axle broke, and he and his mechanic were thrown out. Amblard had a few scratches about the head, and the mechanic slightly sprained his ankle. The Baron de Crawhez was most unlucky, for he had some trouble with his magneto in the first round, and he had to fit on another magneto, which it was found was not set the same way as the first, and so, after two hours' delay, he got away again and completed his second round in 1h. 35m. On his third round, when nearing Rethel, he took his turn too finely when trying to make up for lost time, and smashed his four wheels, but came out safe



M. Thery, the driver of the first car in the trials.

and sound. Rigolly on his Gobron-Brillié had some trouble with his engine and had to give up in the first round, and Duray on the other Gobron-Brillié nearly completed his second round, but had a burst water tank, and all the water got away and the engine therefore heated and seized. The Panhards got two of their cars through, but all three had trouble with their water circulation, and Farman had his face scalded with the steam from his radiator, which shook loose. Richard's team (which provided the winner for the race) made a good run for another place, and one of the most remarkable events of the race is the performance of the second Richard, driven by Caillois. These are the facts of the case, as given by M. Brasier himself. On Friday, May 13th, Caillois, on his Georges-Richard, whilst trying the course, had an accident at a level crossing, and smashed two of his wheels and bent both axles. The car was immediately put on the train and taken back to the works. The axles and wheels were

replaced, and on Tuesday, May 17th, Caillois started out again for the circuit, but when within a few kilometres of Paris a considerable leak occurred in his petrol tank, and in slowing up to pass through the town the rush of wind brought the leaking spirit against the exhaust pipe and set it in a blaze. The whole car in a few moments was enveloped in flame, and as the spirit burned every fusible part was melted and all the woodwork consumed. What was left of the machinery was taken back to the works on a cart, and after superhuman efforts a new car was reconstructed out of the *débris*, and on Thursday morning, May 19th, at five o'clock Caillois left the works for Mazafran. He weighed in under the weight, and started fifteenth in the race, and if he is not one of the Gordon-Bennett team it is entirely due to the fact that one of the new wheels hastily fitted to his car had a rim rather too big, which gave him tyre troubles all the day. He had no less than six punctures and two bursts, and the courageous fellow actually did the last twenty kilometres on the rims without tyres, arriving sixth. The third Georges-Richard, driven by Stead, was the victim of a peculiar accident. A stone got in between the friction drive of his pump and the flywheel, and bedded itself there and stopped the pump working, which, of course, stopped the circulation of water and spoiled his race. Notwithstanding this, however, he completed four laps. The Clément cars were unfortunate, though that driven by M. Clément's son should have been one of the champions, had it not been for the fact that in the third round his water tank burst, and he was obliged to stop and repair it on the road. He repaired, however, in a masterly fashion, carrying it for more than one kilometre on his shoulders to a forge where he could effect repairs.

The Arrival.

At 1.20 in the afternoon— that is to say, after a race of seven hours and twenty minutes, Thery arrived in the midst of the greatest enthusiasm, and the cheering crowd followed him to the weighing machine. M. Brasier fairly danced with joy. The public gave the winner an ovation which he will never forget. He was very much excited, and looked radiant, in spite of the fatigue and dirt, which were most apparent. When he got out of his car, he remarked to his friends, "Well, it was my turn," and so it was his turn, for he has struggled hard for years for a great victory; and it was M. Brasier's turn also, for he has worked hard for this second success, for it must not be forgotten that the winner of the Paris-Berlin race was made by Brasier.

The ten competitors who finished the race before five o'clock are officially classed in the following order:

1. Thery (Georges-Richard-Brasier), 5h. 20m. 28s.
2. Salleron (Mors), 5h. 40m. 2s.
3. Rougier (Turcat-Méry), 5h. 45m. 5½s.
4. Gabriel (De Dietrich), 5h. 48m. 5½s.
5. Le Blon (Gardner-Serpollet), 6h. 13m. 32s.
6. Caillois (Georges-Richard-Brasier), 6h. 21m. 27½s.
7. Teste (Panhard and Levassor), 6h. 40m. 23½s.
8. H. Farman (Panhard and Levassor), 6h. 51m.
9. Pelsler (Gardner-Serpollet), 7h. 0m. 27½s.
10. A. Clément (Clément-Bayard), 7h. 11m. 53½s.

The average speed accomplished in the French eliminating trials has just about come up to expectation. It was on all sides estimated that the average would be one hundred kilometres in an hour, and it is very little short of it. Here are the figures: Thery, 99 kilometres 416, nearly sixty-two miles per hour; Salleron, 93 kilometres 889, about fifty-eight miles per hour; Rougier, 92 kilometres 593, a little over fifty-seven miles per hour.

CORRESPONDENCE.

EDITORIAL NOTICES.

No letters from members of the motor industry will be published when they deal with subjects which may be regarded as advertisements for the writers' or their business interests. At the same time as many of the most practical suggestions come from those engaged in the motor industry, their letters will be inserted when possible, though the names of the firms they represent may be expunged, and the initials of the writers substituted.

Letters of a personal nature will be withheld.

The Editor, although accepting no responsibility for the opinions expressed by correspondents, reserves the right to publish a portion of a letter, and to omit any part which he does not consider interesting or essential.

All communications under a nom de plume should be accompanied by the name and address of the writer, not necessarily for publication, but to assure the Editor as to good faith.

Enquirers who ask for the experiences of private owners with specified cars, parts, or accessories, are requested to enclose a stamped addressed envelope, so that replies which space will not permit us to publish may be forwarded to them. Circulars or letters from interested parties will not be forwarded.

THE BRITISH GORDON-BENNETT CAPS.

[8783].—As a member of the Automobile Club I should like to protest against the way in which the racing cars which are to represent England in the Gordon-Bennett race were chosen. I always understood that the chief item of the eliminating trials was the speed and endurance test which was run the first day over the Isle of Man course. The best average time in that event was Mr. Earp's. The remainder of the trials, from what I can gather, were more for the amusement of the inhabitants of the Isle of Man than for actual testing of the cars.

Why, then, should Mr. Earp and his Napier, who had the bad luck to have an accident, due to the locking of his brakes after the endurance trial, be put out of running?

We want the best possible team to run in the Gordon-Bennett that can be produced, and without Mr. Earp we certainly have not got it.

It seems to be a great pity that through what must be a hasty decision of the committee we should lose one of the best drivers and car.

I have absolutely no interest in the Napier firm, but should certainly like to see the cup brought back to England.

T. HERBERT SPOTTISWOODE.

[8784].—In reference to the correspondence appearing in your last issue on the Gordon-Bennett eliminating trials, I certainly second such remarks as made by Messrs. H. L. Clark and D. M. Weigel—that Mr. Earp and his car should have been selected to represent England for the Gordon-Bennett race.

Why was the committee in such a hurry to come to their decision and without thoroughly considering the matter?

Another complaint I have against the same committee is the way in which they keep back information from press correspondents. They must know that the greatest number of motorists are those that did not go to the Isle of Man, and only learn the news from the journals. Why be so bigoted?

There is another remark I should like to make in reference to the Gordon-Bennett race. The tyres that proved the best are the Palmer tyres, and if the best are to represent England, then these should be fixed to all three cars.

L. R. AJELLO.

[8785].—I am glad to observe that all the automobile press unanimously desire that simple justice should be meted out to Clifford Earp and the Napier car. British interest in the Gordon-Bennett championship ceases entirely if our acknowledged best cars are to be debarred from competition. Shall we stultify ourselves in the eyes of Europe because an absurd award—made in a moment of excitement by a small sub-committee of the Automobile Club (anxious to return in a hurry from the Isle of Man to England)—it is said, cannot be rescinded?

In disinterested circles the opinion is unanimous that a mistake has been made. The sooner our national reputation for common sense is upheld the better.

Let us hear no more silly nonsense about "the car and the man being one unit." Our club should give those manufacturers who have unquestionably won the right to compete full powers to substitute for the Manx cars those that are best qualified for the entirely different conditions of the Homburg struggle. In racing circles we do not hear that the horse and jockey are considered inseparable.

EDWARD KENNARD.

[We have received a number of other letters to the same effect as above, but pressure on our columns makes it impossible to publish them.—Ed.]

MR. EARP AND HIS MISHAP.

[8786].—I shall be greatly obliged if I may thank through your paper the number of very kind friends who have en-

quired about my recent accident. I am pleased to say that it proved to be of a very slight character, and I am now out and about again in excellent health.

W. CLIFFORD-EARP.

INEXPERIENCED CHAUFFEURS.

[8787].—Will you allow another driving school pupil to give his experience? Advertisements appear in almost every daily paper stating "large wages" secured by certified men, full instructions, etc., inducing those who would not otherwise attempt motor driving as an occupation, to pay—or borrow from whom they can—the tuition fee, believing there is a demand for such drivers, and that they will speedily get a place and be able to pay back with interest what they owe. I am twenty years of age, smart in appearance, and a mechanic by trade. Last year, in order to learn motor driving, I worked for some months in a London garage, and from there went to a well-known school of motoring and paid £5 to be taught to drive a certain car and thoroughly understand the mechanism. My previous training enabled me to easily manage this, and I got a certificate describing me as "exceptionally quick," and I know I can steer a car amongst traffic as well as the most experienced driver on the road can. Yet no amount of advertising will get me my first place as private driver. How is one to gain experience if no one will give a first chance? In the interests of other would-be drivers these glowing and misleading advertisements should be exposed for what they are worth.

ANOTHER PUPIL.

[8788].—In reply to Pupil's letter (8776) on this subject, it seems scarcely likely that gentlemen of influence and position would take the trouble to put in print any of their domestic difficulties. Has it never occurred to Pupil that it might be jealousy on the part of other communities interested in the motor traffic—possibly it may be on the side of the mechanic only? Have patience, things must right themselves in time. If a gentleman finds an inexperienced coachman does he trouble the papers? No, he would rise superior to such paltry defamation of character. The knights of the file and chisel will find their level one day.

CARIOLANUS.

AMUSING ARTICLES ON MOTORING.

[8789].—With reference to the extracts from the *Manchester Evening Chronicle* which appeared on page 683 of your last issue, the second item on air-cooling was correct and not at all amusing to those who are aware of the method employed in the air-cooled Lanchester, and the terms air scoops and wind chest are those used by the makers of this car, which, by the way, should be more popular than it is. I had a lot of experience with it, and found that it was a magnificent running and reliable vehicle, whilst the workmanship was of the highest class.

W.P.

MOTORS FOR THE COLONIES.

[8790].—I think it is a very great mistake that no automobile show is held in England after March. A very large number of Australians and New Zealanders, and also British subjects from the Argentine Republic, commence to arrive in England in April, and continue to arrive during May and June, and leave again before December, so as not only to gain the London season, but also to enjoy three summers in succession. To my knowledge a large proportion intend to purchase motor cars, but have no means of seeing a collection of cars of all makes together in this country, and hence have to travel abroad or to St. Louis to be able to form a fair judgment, and probably in the end purchase a foreign made car.

The car that is most serviceable in the colonies is one the axles of which are the same as a carriage, so that the wheels can run in the same grooves on the country roads that the wheels of carts and carriages have beaten down, and are not bad tracks at all for bicycling along. The car should also be set high, especially such parts that would be affected by water—as the carburetter and sparking gear—for most rivers and creeks are not yet bridged on any but the main roads, and small water-races have to be frequently crossed.

I am referring more particularly to the state of the roads in my native land—New Zealand—but have had a certain amount of knowledge of Australia and the Argentine.

The favourite car in New Zealand is the Oldsmobile, which to a certain extent carries out the above requirements, but

Correspondence.

as we have now imposed an extra customs tax of ten per cent. *ad valorem* on all foreign manufactured articles in favour of British manufacture I expect American and foreign cars will not be so popular unless the English manufacturer declines still to wake up. This tax will possibly not be continued unless it is met halfway by England imposing a small tax on foreign meat and butter.

A colonial does not care for much ornament, and hates waste of material and superfluous weight. The chassis must be of the best, and bother the colour or softness of the cushions.

MAORI.

A ROUTE WANTED.

[8791].—I should be grateful if one of your readers could give me the direct route from Oxford to Holyhead. I presume one would have to go *via* Birmingham and Wolverhampton?

W. S.

POLICE CHARGES.

[8792].—I had to answer a charge at Leicester on the 14th inst. for furious driving (not a police charge). Two dogs ran at me when driving about ten miles per hour outside a country village. I dodged one but unfortunately killed the other. The magistrates heard a good many witnesses against me, but dismissed the charge at once as soon as they heard my evidence. There was no traffic and no one on the road, which was thirty feet wide. I really think when a charge of this sort is made without any timing arrangements at all that the persons preferring the charge should have to lodge a sum of money as one does if one objects to a horse (racing).

C. MARTYR, Lieut.-Colonel.

SIGNPOSTS.

[8793].—Mr. C. H. Wilkinson's letter [8752] is most interesting. I would suggest in addition that the directions on finger boards be painted on both sides, for obvious reasons.

A. J. A.

TECHNICAL OFFENCES AND PERSECUTION.

[8794].—The following facts illustrative of the absurdity of the new motor car regulations will be of interest to many of your readers.

Having a contract for the delivery of newspapers on Saturday throughout London and the suburbs, it will easily be understood the constant stoppings at the various newsagents entail a considerable strain on the car. It is therefore necessary to try any car it is proposed to use for this object to ensure expeditious and satisfactory delivery. For this purpose a car was tried on the 30th ult., and the trade numbers allotted by the County Council used, resulting in two convictions and two fines, really for the same offence, at the South Western Police Court, one against the driver for using an unregistered motor car, and whose license was endorsed to this effect, and the other against myself as secretary of the company for unlawfully using an identification mark, and although I was in Paris at the time the offence was committed, my driving license has also been endorsed with the particulars of the conviction.

As you are aware, a number of endorsements may prevent my obtaining a renewal of a driving license, or it may be taken away altogether without my ever having driven a car at all. Surely a ridiculous anomaly!

RANDAL NUTSEY,
Secretary Great Central Garage, Ltd.

AUTOMOBILE CLUB TIMEKEEPING.

[8795].—Now that the identity of the writer of the articles on the above subject is disclosed I am content, as your readers will now be able to form their own opinions on the criticisms that have received your editorial support, and so far as I am concerned my last "saw" will be limited to the correction of still another error on the part of your contributor, and to draw attention to the fact that the system I employed for timing the controls of the Gordon-Bennett race last year has received another commendation, having been adopted for the eliminating trials in France on the 20th inst. (see Continental Notes and News in your issue of the 14th inst.) The further error of your contributor lies in the statement that certain of the foreign competitors were so alarmed at the possibilities of a breakdown that they arranged a complete organisation of auxiliary timekeepers to check the officials at the controls.

These foreign timekeepers were nominated by the foreign competing clubs on the invitation of the Automobile Club of Great Britain and Ireland, the idea of inviting the competing clubs to send such timekeepers having originated with me.

ROBERT E. PHILLIPS.

SUMMARY OF OTHER CORRESPONDENCE.

PRICE OF PETROL. Mr. A. H. Harms, 113-117, Caversham Road, Reading, referring to the complaints as to the price charged for petrol in Reading, informs us that his depot is always open, and that petrol, oil, etc., are sold at nominal prices.

CHARGES FOR HOUSING CARS. "X.L.B." writes: "A few days ago I stayed at the Great Northern Railway Hotel in Lincoln and was charged 5s. for allowing a small 6 h.p. car to stand in a coach house one night. The Normanton Inn near Worksop charged 1s., and other charges were very reasonable and the attention good."

MR. CHAS. JARROTT asks us to correct an impression that appears to have got abroad that he will not drive for England in the Gordon-Bennett race in Germany. He states that having been nominated by the Automobile Club of Great Britain and Ireland to represent it, he will drive in the race in Germany on behalf of England.

OIL V. TAR FOR ROADS. Mr. C. A. Smith, of the White Lion, Cobham, sends a word of warning as to the oiling of roads. The space in front of his hotel has been treated in this manner, with the result that after rain the conditions are most unpleasant. The stuff clings to one's boots, makes a mess everywhere, and the water takes a long time to disappear. Not only so, but the smell is offensive. A portion of the road adjacent which has been tarred appears to be a success. The dust trouble is minimised, there is no smell, and the road is clean when wet. This latter he considers is the best plan of treating roads through villages.

PRICE OF MOTOR CARS IN INDIA. Referring to the letter No. 8757 re the price of motor cars in India in *The Autocar* of the 14th inst. (page 657), "S" writes: "'J.S.' appears to be under the impression that a 9 h.p. Talbot car sold at Lucknow for 8,000 rupees is an example of the normal price of these cars in India. The car in question, however, was sold by auction, and was naturally therefore sold to the highest bidder. There were two or three persons desirous of possessing this car, and naturally their bids increased in accordance with the depth of their pockets and the strength of their desire to possess this particular car. As a matter of fact, however, the Talbot cars are sold in Lucknow at London prices plus the cost of shipment and packing to Lucknow."

INEXPERIENCED CHAUFFEURS. Mr. Archibald Ford, principal of the Liverpool School of Motoring, writing in reference to this subject, says "That to no persons yet have they guaranteed a situation, as they have discovered by experience that it is best to leave this to the pupil's own initiative and enterprise. All they can do for the fees charged, namely, five guineas, is to give a course of instruction to the pupil who comes in the raw state. The first three or four lessons are devoted to the mechanism of the car, and succeeding lessons to driving in Sefton Park, where there is practically no traffic; then he is allowed to drive in somewhat thicker traffic; and finally in the thickest traffic of Liverpool. Instruction in the repair of tyres and the opportunity of examining forty or fifty cars of various makes are given, so that after he has finished his course he is perfectly competent to drive a motor car and look after it intelligently."

THE CADILLAC FIRE. The managing director of the Anglo-American Motor Car Co., Ltd., informs us that the fire which occurred on their premises recently did not destroy the whole of the Cadillac plant, but was confined to the assembling room. It originated by the supply tap of a riveting machine burning crude oil being accidentally opened by a workman passing the machine, who struck it with his elbow. The oil caught fire and flowed from the tank on to the floor, the flames spreading with such rapidity that it completely destroyed this department of the factory. Suitable buildings in the immediate neighbourhood were rented, and contracts let for the duplication of all material, parts, tools, etc., which were contained in the burned portion of the factory. Fortunately a stock of 2,000 engines and a large number of bodies and other parts were saved, they being located in a separate warehouse, which has been turned into a temporary assembling room. A force of 600 employees are working night and day shifts, and by now the factory is running in its normal way and no further interruption is anticipated. About 156 machines were destroyed.

Flashes.

An ever-increasing demand for motor cars is reported from Russia.

* * *

Mr. Austin has been round the Gordon-Bennett course on which the race will be run on the 17th of June, and he telegraphs us from Frankfort that he considers the Isle of Man course was an ideal test for the race itself.

* * *

All three of the French cars which were placed in the eliminating trials and will represent France for the cup were provided with the Simms-Bosch magneto electric ignition. This is fitted on all the German, Austrian, and Italian cars, so it would appear to be extremely probable that, as was the case last year, it will be found on the winning car.

* * *

Mr. and Mrs. Charles J. Glidden, of Boston, Mass., with their engineer, Charles Thomas, who are touring the world in a 24 h.p. Napier autocar, passed through Edinburgh on Wednesday night, having accomplished 14,390 miles of the 40,000 miles proposed to be covered. The car at present in use has done about 7,000 miles of the journey. On Thursday morning the tourists left for Melrose, Durham, and York.

* * *

Colonel W. J. Bosworth uses a 14 h.p. Clément car in connection with the instruction of officers in field sketching and reconnaissance. As an instance of the value of motor cars for this particular kind of military work, it may be mentioned that recently a party of officers, leaving Cedar Court, Roehampton, in three cars, had a run of fifteen miles, sketched three square miles of country, and returned to Roehampton, the time occupied from start to finish being just over three hours.

* * *

Readers will do well to take their reports of motor accidents in the daily press *cum grano salis*. The mishap which occurred very recently near Buxton was reported as a most alarming affair, but the owner of the car informs us that "the reports were evidently constructed by a sensation-mongering reporter."

* * *

One of the most useful and practical schemes we have seen for advertising a business, and at the same time aiding the prospective customer, emanates from Messrs. Jones and Co., of Talbot House, Lichfield. The firm issue a leaflet, on which are given the distances to the principal towns on well-known routes which are at all likely to include Lichfield in one's itinerary. In the centre is an alphabetical list of all motor accessories which are stocked—and they are many—also a lighting-up table, while on the opposite side is a road map of the immediate district around Lichfield. A line calls attention to the fact that one can always get prompt attention between one New Year's Day and another.

A few days since we tried a well-known make of car which had had its old two-cylinder engine removed and one of the new four-cylinder water-cooled Forman engines installed in its place. The governor was not finally adjusted, but the engine showed a large range of power, and could be run from dead slow to exceedingly high speeds without vibration.

* * *

We are interested to hear that the five Napiers used in the Gordon-Bennett eliminating trials were provided with Waterson's high-speed coils, each one of which ran through all the tests without requiring attention or adjustment. This is particularly gratifying, as it was only a comparatively short time ago that it was impossible to obtain a reliable coil made in this country.

* * *

The total export of autocars from New York last year amounted to £255,000, being an increase of £69,000 over the preceding twelve months, when the exports stood at £186,000.

* * *

In a case of alleged furious driving of a motor car at Plymouth last week, a police constable in his evidence swore that Mr. A. W. Manton drove two hundred yards in two seconds—a speed which defendant's solicitor said worked out at 150 miles an hour! A fine of £5 and costs was imposed.

* * *

The secretary of the West Green P.S.A. Slate Club (Mr. G. W. W. Simms, of 9, Abbotsford Avenue, West Green, N.), asks some charitably minded automobilist to loan his car for service in the Tottenham carnival, which is to be held in July next. The carnival is for the benefit of the Tottenham Hospital, and the members

of the Slate Club desire to have it driven in the procession carrying two electrically illuminated slates.

* * *

The "learner" who advertised as under in the *Exchange and Mart* the other day has probably learned more of the value of motor cars ere this than he knew when he sent in his advertisement to the paper: "Wanted, small motor car, for learner, very cheap (about £10). Write; no callers.—Motorist, 26, — Place, N.W."

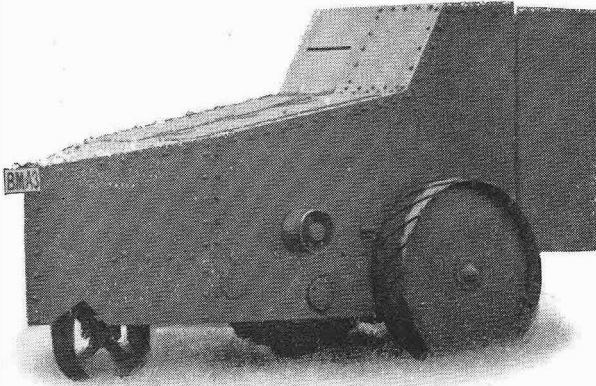
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In view of the approaching summer, automobilists will be interested in knowing that Messrs. J. W. Lovegrove and Co., who may be without exaggeration termed motor clothing specialists, have just issued their new catalogue. The "Ideal" coat in stout material has established itself in favour amongst motorists as a warm winter garment, but when made from lighter material it is equally serviceable for summer wear. Indeed, the coat is so designed as to be adaptable for travelling in all weathers, while its smartness is a quality that goes without saying. Not only are automobilists—both ladies and gentlemen—provided for so far as their complete personal outfit is concerned, but a large range of accessories for the car is catalogued.

THE "AUTOCAR" DIARY.

- May 29.—Arras (A. C. de Nord) Automobile Week closes.
 „ 31.—Aix-les-Bains Automobile Week closes.
 June 4.—Aero Club Meeting, Crystal Palace (2.30).
 „ 7.—Spa Automobile Week commences.
 „ 7.—Namur Automobile Week commences.
 „ 9.—Aero Club Meeting, Crystal Palace (2.30).
 „ 10-20.—A. C. de Namur Summer Festival, Hill-climbing, Flying Kilo, and Boat Races.
 „ 11.—Ranelagh Club Motor Car Races.
 „ 15-30.—(Provisional date).—A. C. de Belgique Circuit des Ardennes Race.
 „ 16.—Weighing-in of Gordon-Bennett Racing Cars (Homburg).
 „ 16.—Evening Reception at Kurhaus, Homburg (Gordon-Bennett Race).
 „ 17.—Gordon-Bennett Cup Race, Tannus Course, Germany.
 „ 17.—Gordon-Bennett Cup Dinner at the Kurhaus (Homburg).
 „ 19.—Motor Car Race at Frankfort-on-Main.
 „ 20.—Gordon-Bennett Cup International Congress
 July 10.—Mont Cenis Hill-climb (A. C. Italy)
 „ 22.—Kiel Motor Boat Race.
 „ 26 Aug. 1.—Spa Automobile Week and Exhibition.
 „ 30.—British International Cup for Motor Boats.
 Aug.—Reliability Trials for Motor Boats.
 Sep.—A. C. G. B. I. Reliability Trials.
 (For Club Fixtures see Club Doings, page 711).

The municipal authorities of Homburg have drawn up an elaborate programme of entertainment for the Gordon-Bennett race week. Amongst other attractions mentioned are an Italian festival, gala performances at the theatre, general illuminations, etc. In short, the town will be *en fête* for the occasion. The price of seats in the grand stands has been fixed at fifty marks each, but seats will be procurable on an extensive platform between Homburg and Saalsburg at five marks each.



AN ARMoured MOTOR CAR. On the 17th inst., there was tested at Bisley, by Colonel Ford, D.S.O., and Major E. Palliser, the Ivel agricultural motor illustrated above. This is an ordinary type Ivel agricultural motor which has been protected by armour plating in such a manner that its useful range of action is not impaired. Its tests were of a severe nature, it having been subjected to rifle fire without effect.

To overcome the difficulty of tail lamps being blown or jolted out, the United Motor Industries are now fitting, when required, to their various sorts of tail lamps a small electric light attachment. There are nine feet of flexible wire, and the small lamp (which is made to screw into the oil container of the lamp in place of the burner) is connected up to the ignition accumulator. We are told that the consumption of the lamp is so slight that it makes very little difference to the life of the accumulator on a charge. Of course, it cannot be jolted or blown out. The electric lamp screws into the oil container, so that the latter can be kept full of oil, and the wick and burner carried as a spare if desired. Existing lamps can be fitted for this attachment in many cases.

We understand that the Hon. Charles Weld-Forester has placed an order with the Duryea Co. for one of the new 15 h.p. British-built Duryea power tonneau, which is to be fitted with a completely closed-in hood over the back seats.

* * *

What appears likely to be a useful puncture-preventer is now being sold by Messrs. Gamage. It takes the form of a chain in a light frame made to the shape of the tyre, and is suspended from the mudguard, so that it just touches the tyre as the wheel revolves. The idea is that any nail or other puncturing instrument picked up by the tyre is caught by the chain and pulled out.

* * *

Before now we have referred to the foolish practice of motorists, when touring, wiring to firms of agents, or makers, for spare parts without also telegraphing the necessary cash. Of course, in all cases where the tourist is well known it does not matter; but there have been many instances in which people entirely unknown to the maker or agent have wired for some urgently required part or accessory. These used to be sent to practically everyone, in the anxiety of the seller to facilitate the comfort of motorists as far as possible, but by hard experience he has found that too often his confidence has been misplaced. We do not believe, in the majority of cases, the touring motorist has any intention of not paying for the goods he obtains in a hurry, but the fact of the matter is, the part comes to hand, he fits it, and continues his tour rejoicing, quite forgetting the last address by which he was known was at some hotel which he may never visit again. The matter goes from his memory, and the only man who does recollect it is the unfortunate person who supplied him with the goods. One of the most glaring instances we have come across of late is in the case of an American millionaire, who wired to the United Motor Industries for some things he wanted urgently. These were sent him, but he left immediately afterwards for the States, and now his secretary advises the firm that the matter will be looked into when his principal is in England in August. Under the circumstances, we advise all who find themselves in need of spare parts to wire the cash for them, or express their desire to do so as soon as they are advised of the amount, otherwise we do not think they will find their wants supplied, except, of course, when they are well known to the firm to which they telegraph.



Ruins after the fire at the Nice Automobile Club Garage. The centre illustration depicts all that is left of the many cars the garage contained.

THE SCOTTISH A.C. RELIABILITY TRIALS.

GLASGOW TO LONDON NON-STOP RUN.

There is no fixture which for its duration is of more thorough and practical a character than the Glasgow to London reliability trial, which has just been most successfully carried out for the third time by the Scottish Automobile Club. Last year, upon the first occasion of this run of 413¾ miles, twenty-two cars and seven motor cycles competed; this year, of the thirty-one automobiles entered, twenty-nine started. The motor cycle element had wisely been omitted this year, chiefly, we presume, from the difficulty of properly observing the doings and shortcomings of the single-track automobiles. Several cars took part in the two days' trip which, as far as memory carries us, have not performed in so public an event before, and this being so their running will, of course, be specially remarked. Amongst these were the 6 h.p. light Wolseley, the 12 h.p. Richardson, the 12 h.p. light Eagle, the 12 h.p. Siddeley, the 10 h.p. Ryknield, the 6 h.p. Cronan, the 8½ h.p. Humber, the 16 h.p. Sunbeam, the 18 h.p. Renfrew, the 18 h.p. Siddeley, and others. No one should run away with the idea that because this trial is limited to two days only it is in any sense a mild experiment. Even with automobiles so far advanced in construction as they are to-day, a continuous run of 413 odd miles is no mean test, and is certain to find out the weak points of any car which possesses such un-

desirable characteristics. In reviewing this trial by the light of the official pronouncements which appear at the foot of this account, the reader must bear in mind that weather of the most perfect character was experienced except one short heavy shower which fell just as the cars were approaching Leeds through Otley. The roads from start to finish were as perfect as British roads could be expected to be over such a length of country, in the spring of the year. There was not too much dust upon the first day. Indeed, until the border had been crossed no dust was thrown up at all by the cars, but on the Leeds-London stage there was enough and to spare.

The Start.

The start was called for 5.30 a.m. on the 19th inst., and as early as five o'clock all the vehicles entered, save the 20 h.p. Spyker (which had been set down by its private owner, Mr. J. W. Broadhead, of Elland), were in their allotted positions in St. Vincent Street, hard by the energetic secretary's office.

Punctually at the appointed hour, the car bearing the number 1, a 16 h.p. Sunbeam, driven by Mr. Pullinger, opened the ball, and set out on its southward journey. This vehicle was followed at intervals of half a minute by the cars as under:

Description of Car.	Starting Order No.	Seating Capacity.	h.p.	No. of Cylinders.	Diameter of Cylinders.	Stroke of Pistons.	Approx. Weight Unladen.	Description of Tyres.	Selling Price Complete.	
									£	S. D.
16 h.p. Sunbeam ..	1	4	16	6	80 mm.	120 mm.	18 cwt.	Continental ..	750	0 0
12 h.p. Gladiator ..	2	4	14	2	105 mm.	130 mm.	15 cwt.	Dunlop ..	395	0 0
14 h.p. Renault (1904) ..	3	4	16½	4	90 mm.	120 mm.	15 cwt.	Clincher-Michelin ..	630	0 0
10 h.p. Argyll ..	4	4	12	2	88 mm.	140 mm.	13 cwt.	Clincher-Michelin ..	350	0 0
12 h.p. Argyll ..	5	4	14	3	90 mm.	120 mm.	16 cwt.	Clincher-Michelin ..	425	0 0
16 h.p. Argyll ..	6	4	20	4	88 mm.	130 mm.	16½ cwt.	Clincher-Michelin ..	550	0 0
10 h.p. Ryknield ..	7	4	10	2	4in.	4½in.	15½ cwt.	Clipper-Continental ..	367	10 0
6 h.p. Vauxhall ..	8	2	6	1	4in.	5in.	6½ cwt.	Dunlop ..	150	0 0
12 h.p. Richardson ..	9	4	14	2	105 mm.	130 mm.	17 cwt.	Michelin ..	378	0 0
16-20 h.p. Martini ..	10	4	20	4	100 mm.	130 mm.	22 cwt.	Clipper-Continental ..	720	0 0
24 h.p. Eagle Light ..	11	2	24	4	110 mm.	130 mm.	15 cwt.	Michelin ..	450	0 0
12 h.p. Eagle Light ..	12	2	12	2	110 mm.	130 mm.	10½ cwt.	Michelin ..	280	0 0
12 h.p. Arrol-Johnston ..	13	6	12	2	4½in.	6½in.	26 cwt.	Shrewsbury Challiner, solid ..	470	0 0
12 h.p. Sunbeam ..	14	4	12	4	80 mm.	120 mm.	17 cwt.	Collier ..	537	12 0
12 h.p. Pipe ..	15	4	15	4	80 mm.	124 mm.	16 cwt.	Michelin ..	390	0 0
16 h.p. Rochet-Schneider ..	16	4	16	4	100 mm.	140 mm.	19 cwt.	Clincher-Michelin ..	725	0 0
12 h.p. Siddeley ..	17	4	12	2	4½in.	4½in.	16 cwt.	Continental ..	450	0 0
16 h.p. Delahaye ..	19	4	16	4	4in.	5½in.	19 cwt.	Michelin ..	829	10 0
18 h.p. James and Browne ..	20	4	18	4	4in.	6in.	18 cwt.	Palmer ..	650	0 0
6½ h.p. Cadillac ..	21	4	9.65	1	5in.	5in.	11 cwt.	Double-tube Clincher ..	240	0 0
12 h.p. De Dion ..	22	4	15	2	100 mm.	110 mm.	16 cwt.	Dunlop ..	525	0 0
18 h.p. Baudouin-Dechamps ..	23	4	18	4	95 mm.	120 mm.	1050 kilos.	Michelin ..	550	0 0
16 h.p. Maxim ..	24	4	16	2	110 mm.	120 mm.	21½ cwt.	Clipper-Continental ..	470	0 0
20 h.p. Thornycroft ..	25	4	20	4	4in.	4½in.	19 cwt.	Palmer Cord ..	660	0 0
6 h.p. Light Wolseley ..	26	2	6	1	4½in.	5in.	8½ cwt.	Dunlop ..	175	0 0
18 h.p. Siddeley ..	27	4	20	4	4in.	4in.	18½ cwt.	Palmer Cord ..	625	0 0
6 h.p. Cronan ..	28	4	8	2	3½in.	4in.	13 cwt.	Michelin ..	250	0 0
8½ h.p. Humber ..	29	4	8½	2	3in.	4½in.	12½ cwt.	Clincher ..	262	10 0
18 h.p. Renfrew ..	30	4	18	4	95 mm.	120 mm.	18 cwt.	Michelin ..	450	0 0
8-10 h.p. Vulcan ..	31	4	10	2	3½in.	4½in.	13 cwt.	Michelin ..	450	0 0

A slight shower or two had fallen overnight, just enough to lay the dust, but, happily, insufficient to make even the tram-dominated granite-settled streets of Glasgow in any wise dangerous. The effect of the rain on the country roads was most marked and satisfactory.

The writer was accommodated with a seat in the tonneau of the sweetly-running 16-20 h.p. Martini, driven

by Captain Deasy, and observed by Mr. Shanks, himself the owner of a 14 h.p. Daimler and a keen automobilist. Captain Deasy's car started tenth, and having the extreme bad luck to sustain tyre failures to both back wheels simultaneously very early in the morning, which necessitated delay of some forty-five minutes, was passed while in the throes of tube replacement by nearly all

Scottish Reliability Trials.

Photograph by *Argent Archer*
Weighing the cars at Stamford. The Martini on the weighbridge.

the vehicles competing. Consequently the occupants of this car were in a good position to note breakdowns, if any, but except remarking that beyond Larkhall the 12 h.p. Argyll (No. 5) and between Penrith and Carlisle No. 29 (the 8½ h.p. Humber) were halted by the roadside, engine running, no rift in the equal procession of the cars was noticed. So soon as Hamilton was cleared, the enjoyable part of the trip commenced, and those who did not enjoy the run past Crawford Inn, over the wild Beattock Summit, down the fast stretch connecting Lockerbie with Gretna Green, must have been hard indeed to please. Owing to our tyre troubles we were late in at Penrith, but found there a large and admiring crowd surrounding the cars, the little town having made general holiday to welcome us. The departure of the vehicles was somewhat irregular, as each car was obliged to remain the allotted lunch time before leaving and tackling the northern ascent of Shap Fells. By the time we ran in, twenty-eight cars had already arrived, but we learnt that the 8½ h.p. Humber had had trouble through the centre of a Pogonon plug blowing out, and the 12 h.p. Argyll was late through a hot big end which retarded it some twenty odd minutes. When we left, the 18 h.p. Renfrew and the 8-10 h.p. Vulcan had not shown up, and no tidings could be gleaned of them. The road over Shap was in better condition than we ever remember to have seen it, although that is really not saying much, so that the minimum of 1h. 20m. for the sixteen and a half miles to

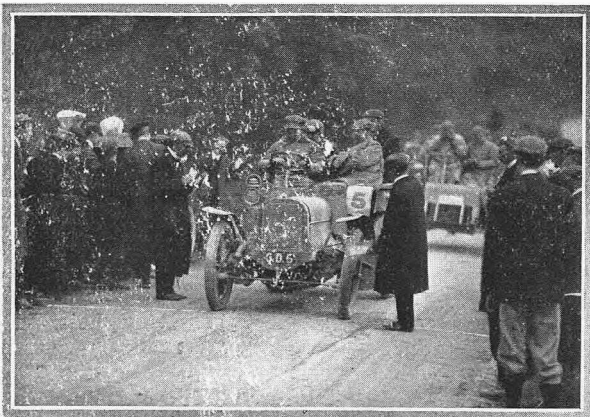


Photograph by *Argent Archer*
The Arrol-Johnston at Penrith. The only car to carry six persons.

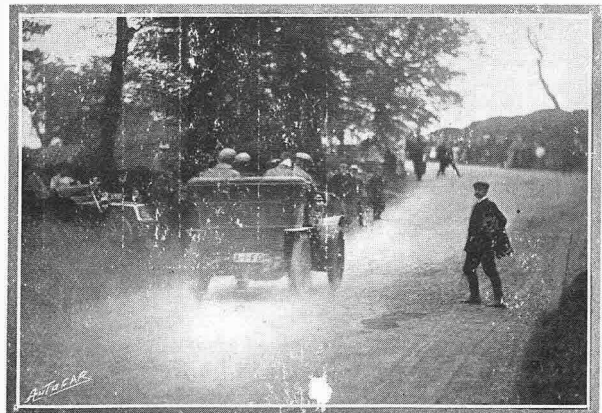
the summit was more than tedious for all but the lowest-powered cars. We think that four odd minutes per mile for this stage was a trifle low, particularly as several miles of the stretch after leaving Penrith offer nothing in the shape of a severe adverse gradient. In the case of all but two or three cars, the remainder of the run offered no incident save that we could have suffered a still greater reduction of the minimums for the various stages, and this notwithstanding that the route from Kendal through Settle to Skipton, Otley, and Leeds was the most trying part of the two days' run. Arriving in Leeds, the cars were safely stored in the commodious drill shed of the Volunteer Medical Corps, and so soon as they were here disposed their drivers and occupants betook themselves with all speed to the Queen's Hotel for much-needed rest, food, and a cleansing from travel stains, after a most successful and enjoyable run of 211½ miles. During the evening it was reported by Mr. Smith that the 30 h.p. Renfrew and the 24 h.p. light Eagle had been withdrawn from the trial, also that it was doubtful whether the 8-10 h.p. Vulcan would leave Penrith, and that the 6 h.p. Crouan was in trouble with a seized bearing on Shap. Later on, the news came that both the last-named cars were in and that the Renfrew was continuing.

Friday.

The hour of departure from Leeds was set thirty minutes later than on the previous day, but even then a



Starting the cars up Woodcock Hill.



Looking up Woodcock Hill.

Scottish Reliability Trials.

considerable number of people lined the outgoing route to witness the passing of the cars, the 6 h.p. light Wolseley being the first to get away. The route followed was by Pontefract, Doncaster, and then on, following the well-known course of the Great North Road, through Bawtry, Retford, Tuxford, Newark, Grantham, to Stamford (where the lunch halt was called), and then continuing through Norman Cross, Biggleswade, Hitchin, Welwyn, and Hatfield, where the road was taken through St. Albans and Elstree to Barnet, in order to accomplish the scaling of Woodcock Hill. The first car was timed to arrive at the foot of this stiff climb at 4.45, and very shortly after this time No. 1 (the 16 h.p. Sunbeam, driven by Mr. Pullinger) made its appearance. The cars were stopped at the bottom of the hill by Messrs. Napier and Nesbit, and marshalled to the tape, the ascent being made against the watch from a standing start, which under the circumstances made the test a very severe one for the lower-powered cars. The distance covered and height mounted in the climb were 710 feet and 62.82 feet respectively, or an average gradient of 1 in 10.13, the steepest bit being 1 in 7.3 for a length of fifty feet. The times occupied in the ascent, taken by Mr. Harry J. Swindley and Mr.

the above order. All were there within their maximum time limits with the exception of the Vulcan and the Crouan.

Having scaled the hill, the cars proceeded to Barnet, and thence to the Automobile Club in Piccadilly, *via*

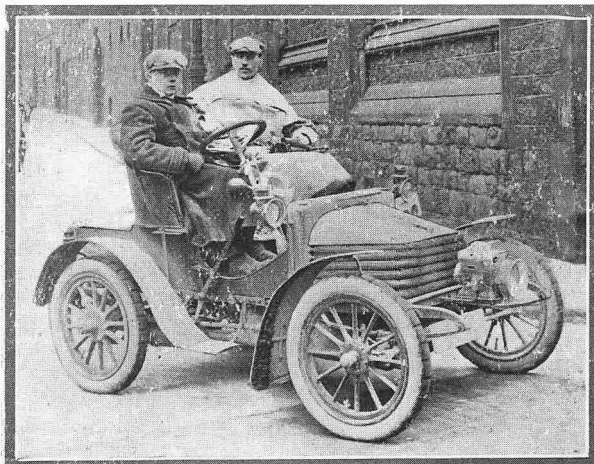


Photograph by *Argent Archer*.
The Cars arriving at Penrith.

Finchley, Swiss Cottage, Regent's Park, Baker Street, and Park Lane, where they arrived in the following order and at the following times:

- 4. 10 h.p. Argyll, 5.53 p.m., 2m. ahead of time.
- 26. 6 h.p. Light Wolseley, 5.57 p.m.
- 20. 18 h.p. James and Browne, 5.59 p.m.
- 17. 12 h.p. Siddeley, 6.0 p.m.
- 6. 16 h.p. Argyll, 6.14 p.m.
- 25. 20 h.p. Thornycroft, 6.4 p.m.
- 13. 12 h.p. Arrol-Johnston, 6.4½ p.m.
- 12. 12 h.p. Light Eagle, 6.5 p.m.
- 3. 14 h.p. Renault, 6.7 p.m.
- 24. 16 h.p. Maxim, 6.7 p.m.
- 22. 12 h.p. De Dion, 6.8 p.m.
- 7. 10 h.p. Ryknield, 6.10½ p.m.
- 19. 16 h.p. Delahaye, 6.15 p.m.
- 16. 16 h.p. Rochet-Schneider, 6.15½ p.m.
- 10. 16-20 h.p. Martini, 6.16 p.m.
- 2. 12 h.p. Gladiator, 6.19 p.m.
- 5. 12 h.p. Argyll, 6.19 p.m.
- 21. 6½ h.p. Cadillac, 6.21 p.m.
- 14. 12 h.p. Sunbeam, 6.21½ p.m.
- 9. 12 h.p. Richardson, 6.23 p.m.
- 15. 12 h.p. Pipe, 6.33 p.m.
- 1. 16 h.p. Sunbeam, 6.36 p.m.
- 27. 18 h.p. Siddeley, 6.37 p.m.
- 29. 8½ h.p. Humber, 6.38 p.m.
- 8. 6½ h.p. Vauxhall, 6.40½ p.m.
- 28. 6 h.p. Crouan, 7.51 p.m.
- 31. 8-10 h.p. Vulcan, 8.10 p.m.

Nos. 11 (the 24 h.p. Light Eagle), 23 (the 18 h.p. Badouin-Deschamps), and 30 (18 h.p. Renirew) did not leave Leeds.



Photograph by *Argent Archer*.
The 6 h.p. Wolseley which ran through the trials without a stop.

Douglas Straight, official timekeepers A.C.G.B. and I., were as follow:

- 1. 16 h.p. Sunbeam, failed through slipping clutch.
- 6. 16 h.p. Argyll, 42½s.
- 4. 10 h.p. Argyll, 58s.
- 20. 18 h.p. James and Browne, 49½s.
- 26. 6½ h.p. Light Wolseley, 50½s.
- 17. 12 h.p. Siddeley, 58½s.
- 25. 20 h.p. Thornycroft, 38½s.
- 12. 12 h.p. Light Eagle, 55½s.
- 9. 12 h.p. Richardson, 1m. 5s.
- 3. 14 h.p. 1904 Renault, 45½s.
- 22. 12 h.p. De Dion, 57½s.
- 24. 16 h.p. Maxim, 1m. 21½s.
- 13. 12 h.p. Arrol-Johnston, 1m. 23½s.
- 19. 16 h.p. Delahaye, 34½s.
- 16. 16 h.p. Rochet-Schneider, 41½s.
- 10. 16-20 h.p. Martini, 32½s.
- 5. 12 h.p. Argyll, 5m. 18s., stopped on hill.
- 21. 6½ h.p. Cadillac, 1m. 3½s.
- 2. 12 h.p. Gladiator, 59½s.
- 14. 12 h.p. Sunbeam, 45½s.
- 15. 12 h.p. Pipe, 43½s.
- 27. 18 h.p. Siddeley, 39½s.
- 29. 8½ h.p. Humber, 1m. 1s.
- 8. 6 h.p. Vauxhall, 1m. 29½s.

Every car which left Leeds had also left Stamford by 1.15 p.m., and arrived at the foot of Woodcock Hill in



Photograph by *Argent Archer*.
in the George Hotel yard at Stamford.

The hill-climbing qualities of the cars engaged must not be appraised on the times given above, as marks will

Scottish Reliability Trials.

be awarded therefor on the following formula, which will serve as a basis:

$$\frac{(w \times 60 \times L) + (W \times h) + \frac{(W \times v^2)}{2}}{2 \times \left(\frac{G}{D} \right)}$$

EXPLANATION OF SYMBOLS.

w = Laden weight of car in tons.	s = Stroke in inches.
L = Length of hill.	G = Gear ratio or number of revolutions of engine for one revolution of road wheel on lowest gear.
W = Laden weight of car in lbs.	D = Diameter of road wheel in feet.
h = Height of hill.	
v = Velocity in feet per second.	
a = Area of piston in square inches.	
n = Number of cylinders.	

Preliminary Announcement of Non-stop Certificates.

The committee of the Scottish Automobile Club (Western Section) have issued the following official statement:

A preliminary examination of the observers' and stewards' records has disclosed that non-stop certificates have been gained by the following cars:

Class A (cars having one cylinder).—No. 26, 6 h.p. Light Wolseley, entered by Rennie and Prosser, Ltd., Glasgow.

Class B (cars having two cylinders).—No. 4, 10 h.p. Argyll, entered by the Hozier Engineering Co., Ltd., Glasgow. No. 12, 10 h.p. Light Eagle, entered by the Eagle Motor and Engineering Co., Ltd., Altrincham. No. 13, 12 h.p. Arrol-Johnston, entered by the Mo-car Syndicate, Ltd., Paisley.

Class C (cars having three or more cylinders).—No. 3, 14 h.p. Renault (1904), entered by the Roadway Autocar Co., Ltd., London. No. 14, 12 h.p. Sunbeam, entered by John Marston, Ltd., Wolverhampton. No. 20, 18 h.p. James and Browne, entered by James and Browne, Ltd., London. No. 25, 20 h.p. Thornycroft, entered by the Thornycroft Steam Waggon Co., Ltd., Chiswick and Basingstoke.

These are all petrol vehicles.

The above statement is subject to more minute and exhaustive examination of the records, and is not to be held as final.

The gold medal awards cannot be determined until the times recorded by the official timekeepers on the hill-climbing test at Woodcock Hill, Elstree, have been worked out on the basis of the prescribed formula.

The greatest praise is due to the officials of the Scottish Automobile Club, and particularly to Mr. Robert J. Smith, for the really masterly way in which this trial was organised and carried out.

Not content with its non-stop performance southward, the Arrol-Johnston was started back north from the Automobile Club on Saturday evening. It carried four passengers this time, not six as on the outward journey, one of them being Mr. Adam, chairman of the Western Section of the Scottish Automobile Club. The engine was kept running the whole time, and the return journey was made in twenty-two hours.

Without drawing any invidious comparisons, we think that the performance of the two single-cylinder machines was remarkably good. As it was, the 6 h.p. Wolseley made a non-stop run, and, considering the position in which it started at Glasgow and that which it took at the finish, it will be seen that, to say the least of it, it behaved remarkably, and proved very conclusively what a really good voiturette can do. The Vauxhall performance, too, was excellent. We believe it only made one stop involuntarily, and that was due to a sparking plug which gave out. The machine had been driven some 3,000 miles before the start from Glasgow. The petrol consumption, too, was very low, working out at about thirty-nine and a quarter miles a gallon.



Woodcock Hill, between Elstree and Barnet, up which the cars were timed from a standing start.

CLUB DOINGS.

South Wales A.C.

The annual general meeting of the South Wales and Monmouthshire Automobile Club was held at the Royal Hotel last week. The report detailed the action of the committee in opposing the restrictions which the Newport Corporation sought to put upon the speed of motor vehicles. The condition of local roads had received considerable attention, and efforts were being made to effect improvements. From the balance sheet it appeared the club has a balance in hand from last season's working of £58 7s. 11d.

Derby and District A.C.

Under the auspices of the above club the first hill-climbing competition of the season took place on Saturday, May 14th. The site selected was Hazlewood Hill, near Duffield, the road rising about 300 feet in a little under a mile. The gradient is a gradually increasing one, rising to about one in seven near the summit. Mr. Marcus J. Astle, who won the medal at the corresponding meeting last year, again proved successful in making the fastest run on his 12 h.p. De Dion, but he was only sixteen seconds in front of Mr. G. F. Reading, who with a heavier car—a 10 h.p. Wolseley—made an excellent ascent. Very good times were also made by Dr. Hunt, Mr. Guest, and Mr. Leech.

Wolverhampton and District A.C.

The opening of the new club premises, Lichfield Street, Wolverhampton, took place on the 9th inst. Mr. J. O. Evans (president) congratulated the members upon the large increase of membership, the interest displayed by them in automobilism, and the bright prospects of the club. In the course of three years the club had attained a membership of 100.

The cost (about £300) of furnishing the reading room, refreshment room, and billiard room had been provided for, and a guarantee fund secured against any possible loss, but so far as he could see there was every prospect of it proving an unqualified success. On Saturday last about thirty members journeyed to Bridgnorth, whence, after tea, the run was continued to Shifnal and home, a most enjoyable afternoon being spent.

CLUB FIXTURES.

- May 28.—Nottinghamshire A.C. hill climb.
 „ 28.—Reading A.C. meet Gloucestershire A.C. at Farringdon (5 p.m.)
 „ 28.—Berks A.C. opening meet and gymkhana, Hall Place, Maidenhead.
 „ 28.—Eastern Counties A.C. meet at Felixstowe.
 „ 28.—Yorkshire A.C. run to York.
 „ 28.—West Surrey A.C. run to Hindhead (hill climb).
 „ 28.—Lincolnshire A.C. run to Crowland.
 „ 28.—Wolverhampton A.C. run to Sutton Coldfield.
 „ 28.—Southern A.C. run to Chertsey.
 „ 28.—Sheffield and District A.C., Hunters Bar for Chapel-en-le-Frith.
 „ 29.—Southern M.C. run to Odiham.
 June 2.—South Lincs. M.C. meet at Spilsby.
 „ 2.—Norfolk A.C. (Yarmouth District) meet at Potter Heigham.
 „ 4.—Sheffield A.C. meet at Grindleford Bridge.
 „ 4.—Scottish A.C. (Western Section) run to Tarbet Hotel, Loch Lomond.
 „ 5.—Gloucestershire A.C. run to Malmesbury (4.30).
 „ 8.—Berks A.C. meet at Ockwells Manor, Maidenhead.
 „ 11.—Ranelagh Club motor car races.



THE DERBY HILL-CLIMB, May 14th. At the summit of Hazlewood Hill, near Duffield. A 10 h.p. Wolseley overtaking a 4½ h.p. Benz.

THE AMERICAN ELIMINATING TRIALS.

A dismal fiasco, the result of improper timekeeping and defective organisation, occurred at Cleveland, Ohio, on the Clifton Boulevard, in the A.A.C. eliminating trials for the Gordon-Bennett race. Two cars—the Winton and the Peerless—turned out, and ran backward and forward over a straight stretch of asphalt and macadam three and a half miles in length, and eventually, after covering ninety and fifty miles respectively, both cars had trouble, Mooers on the Peerless twisting his gears through, it is said, a seizing piston, and Oldfield on the Winton through breaking a pump pin. A dispute ensued as to the dis-

tances covered, no one seeming to have any official statistics whatever. Both cars were disqualified by the American club, and it looked as if America would not be represented in Germany next month; but, after various appeals, the committee of the club decided to allow a further trial, which took place on the 19th inst., but of which particulars are not yet to hand.

A separate trial of the Christie front-driven racer has influenced many of the American committee in its favour, and there is some likelihood now of this car, in company with the Winton and Peerless machines, coming over for the International event.

THE CRYSTAL PALACE SHOW.

We are informed that although the Society of Motor Manufacturers and Traders have passed a resolution to hold a show at the Olympia in 1905, the automobile show inaugurated in 1902 at the Crystal Palace (in which that society have taken part in 1903 and 1904) will be held in February next, from the 10th to the 18th, as already announced.

The De Dietrich system certainly came out well in the French eliminating trials, as the third place was gained by one of the two Turcat-Méry cars, while the fourth place and first reserve was gained by a De Dietrich. The Turcat-Méry and Dietrich are identical in every respect, but the Turcats were finished sooner, so that there was time to get them into better running trim. Gabriel would have been much better placed but for his water tank giving trouble. Jarrott suffered from the same cause of delay, as the tanks had, in the effort to keep down the weight, been cut a shade too fine.

Users of the White steam car, and those interested in this pleasing vehicle, should not fail to obtain a copy of the "White Bulletin," a little publication which is produced from time to time by the manufacturers of the car. It is full of interest, and well illustrated. The London address of the company is 35-37, King Street, Regent Street, W.

POLICE TRAPS.

Now that fine weather has come and the roads are again in first-class condition, automobilists will be well advised to be on the alert for the detection of police traps. We shall be pleased to receive early intimation as to the exact locality of such traps as may be noticed by our readers, so that we may give timely warning of their existence.

The Kingston Police are showing renewed activity. Traps are set on the Kingston side of the Reservoir on the Portsmouth Road. There are at present two—one from Cleveland Road to Uxbridge Road, and another one from Palace Road to St. Leonard's Road, and *vice versa*. Motorists may therefore expect to be trapped at any place between Kingston and the waterworks, and as these traps may be moved further away after this notice, motorists should be particularly vigilant, and it will be as well to be prepared with rebutting evidence to put a stop to these unfair police methods, especially as summonses are now taken out under Section 1 of the Motor Car Act 1903, and everyone is charged with driving to the danger of the public whether he is or not.

A SUCCESSFUL PARAFFIN MOTOR.

Following up the description of Mr. H. Sutton's paraffin motor, which appeared in *The Autocar* of April 16th (page 536), it will be interesting to quote from a letter we have since received from the inventor of the device. Speaking of paraffin as a fuel, he says it is as clean as petrol and about twenty-five per cent. more powerful, and then continues: "I have just converted a Winton car to my system for Dr. Merrill, Deputy Consul for U.S.A., and vice-president of the Automobile Club of Victoria. I removed the Winton carburetter, air pump, ignition, etc., taking out about half a hundredweight of material, and placed my apparatus in. The car runs perfectly on .825 Russian oil, and without alteration will use any kind of lighter oil or spirit. The whole of the control is by the advance spark lever. This controls the rate of speed of engine, the fuel feed automatically regulating on my system of vacuum control, in which, as you are aware, there are no moving parts such as floats, valves, or pump feeds. The car and speed of the motor are thoroughly controlled by the ignition lever, showing the system to be more perfect and flexible than any petrol system. You will be pleased to hear that, to use kerosene, you have fewer levers and regulations to attend to than in other systems with petrol. Of course I use petrol as simply as kerosene if required, but I like the heavy oil best. Please understand that heat takes no part in producing my explosive mixture with heavy oil, as I can start a motor bicycle from the cold, the atomising velocity being obtained with the pedals."

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AMERICAN AUTOMOBILISTS. A perspective group of the White steam cars which took part in the recent procession of New York automobilists.