THE MOTOR SHOW FROM THE MEDICAL MAN'S POINT OF VIEW.

POINTS ABOUT CARS AND PRICES.

By H. MASSAC BUIST.

HAVING dealt in general terms last week with the outstanding features and general tendencies of the Motor Show as it is calculated to appeal to the requirements of the medical profession, some of the main features of certain cars displayed may be summarized under a scheme whereby they are classified in groups according to the prices of the complete vehicles, the limit being set at £500. For the purposes of contrast in the limited space at disposal, examples alike of distinctive and conventional constructional practice are given. Wherever possible the equipment included in the price is specified. In some cases this is what is barely necessary to drive the car on the road, while in others it is of an absolutely complete character. As there are hundreds of makes of cars on the market, it is, of course, impossible to deal individually with every example, and the mention of a car in the following paragraphs does not necessarily mean that in the writer's opinion it is well suited to the needs of medical men who have to submit their automobile to very hard usage. In the light or cyclecar section we are to look for the introduction of still other models at the Motor-Cycle and Cyclecar Show, which will succeed the current exhibition that closes at Kensington on Saturday night. The Motor-Cycle, Cyclecar, and Cycle Show will be opened to the public there on November 24th instant.

THE £475 ELECTRICALLY LIT WOLSELEY TYPE.

There has been no occasion to remodel in any essentials the 16-20-h.p. four-cylinder Wolseley car which has achieved the distinction of finding the widest popularity of any motor vehicle yet produced in a British factory, in that something in the neighbourhood of four thousand of these machines have been produced in the last manufacturing year, and an increased rate of output will be maintained this year, by reason of continued concentration on a three-model programme, the two larger vehicles being six-cylinder machines. The outstanding features of the four-cylinder Wolseley are the degree of refinement achieved in combination with the quality to withstand hard wear and tear, these vehicles having long since earned a high reputation in the hands of the medical profession in this country. The bore measurement is 90 mm. and the piston travel 121 mm., giving a volume of 3,180 c.cm. The gearbox is, of course, of the three-speed sort, and the clutch is of the many disc type. Rudge-Whitworth detachable wire wheels are standard, together with hood, screen, complete electric lighting power, generating plant and set of lamps, and so forth, the body being of uncommon ample proportions. The price of the complete vehicle is £475. The rear springs are hung from the back axle. The compressed air starter, which the firm introduced last year on the six-cylinder models, is now available as an extra on the four-cylinder sort, and has a Dermatine compressor valve. Moreover, a pedal is substituted for one of the hand controls for the distributor.

A £475 SIZAIRE-BERWICK 20-H.P. CHASSIS.

A new make of car introduced to Britain at this show by the firm of F. W. Berwick is the four-cylinder nominal 20-h.p. Sizaire-Berwick machine of 90 mm. bore measurement by 160 mm. piston travel, with four-jet carburettor, clutch of the many disc type, four-speed gearbox, bevel driven back axle and Rudge-Whitworth detachable wire wheels, sold in chassis form at £475. Some distinctive features of the construction of this vehicle are that the valves have proportionately large mushroom heads and thin stems that are each guided quite up to the head, so that they are shielded from the exhaust gases. The light steel pistons are machined out of the solid. Hollow connecting rods are employed, as well as gudgeon pins of large diameter. The flywheel is original in that it is a composite one, fashioned of three light members balanced individually, then bolted together. The back end of the car frame is of bridge formation to clear the axle, from which the long flat half elliptic springs are hung, neither torque nor radius rods being employed.

THE £475 SELF-STARTING SIX-CYLINDER HUDSON.

From America comes the Hudson 25-h.p. six-cylinder car built on European lines with the cylinders cast in threes, the bore measurement being 87 mm. and the piston travel 127 mm. This machine has the mixture fired in the cylinders—as well as the car lighted and the engine started—by the Delco electrical apparatus. The gearbox is of the three-speed sort, the bevel drive is employed in the back axle, and the clutch is of the many disc type. The machine is supplied as a seven-seated car with one-man hood, luggage-grid, tyre-carrier, clock, speedometer, electric signal horn, and all lamps, for £475. The constructional features may be described as following well approved European practice.

THE £450 FOUR-SEATER 15-H.P. NAPIER.

The Napier firm this year supplies its three-speed 15-h.p. four-cylinder bevel driven model, with wooden wheels, five-seated body, hood, and screen, for £450 complete. The four-speed worm-driven model with Rudge-Whitworth detachable wire wheels costs £45 more, while there is introduced this year a 16-22-h.p. four-cylinder type, with 7 mm. larger bore measurement, the same piston travel, a plate instead of a many disc type of clutch, to retail as a complete vehicle for £550, the chassis price being £450. The cheapest of these three models is, of course, the lowest priced Napier that has ever been offered to the public.

THE £450 FIVE-SEATER 19.9-H.P. VALVELESS.

The two-stroke system of engine construction is illustrated by the Dodson exhibit of a two-cylinder 19.9-h.p. valveless car having a bore measurement of 127 mm. and a piston travel of 140 mm., giving a volume of 3,546 mm. It is fitted with a four-speed gearbox, worm-driven back axle, the firm's own carburettor, and is supplied with hood, screen, horn, number plates, three lamps, and spare Shrewsbury-Challiner rim for £450. There is a 15-h.p. model supplied with the same equipment for £20 less. These engines are built by David Brown and Sons, of Huddersfield, and have six working parts apiece—two piston rods, two connecting rods, and two crank shafts. These cars are now furnished with longer wheelbase, also improved silencing, while the stroke measurement of the larger type has been increased by half an inch. The firm also markets Belgian built Sava cars of 14-18 and higher horse-power, the chassis price of the one named being £295.

THE £424 SIX-CYLINDER DELAGE COMPLETE CAR.

Delage set a notable lead to the European motor industry a couple of seasons ago in introducing a 15.9-h.p. six-cylinder car designed to bring this principle within the range of the motorist of moderate means. As the result of some seasons' experience with this system the type is shown with some improvements, as instance the furnishing of a larger oil reservoir, the provision of an extra bearing to the crankshaft to stiffen it and eliminate periodic vibrations, the employment of chain drive for camshaft and magneto machine, and the enlargement of the water space round the exhaust trunk. Compression taps are fitted, but there are no radius rods now, the drive and torque being taken through the forward end of the long back springs. Larger exhaust pipes and silencer are furnished. This machine is further notable in that all six cylinders are cast in one piece, the bore measurement being 65 mm. and the piston travel 130 mm. The vehicle is sold with two-seater body for £424, or for four-seater body for £447.

THE £410 12-H.P. TALBOT MODEL.

The Clement-Talbot Company markets three models that come within the price range under consideration. All are four-cylinder cars with the casting done in pairs, and are equipped with four-seater bodies. The 12-h.p. type is sold with hood, screen, horn, and electric lighting set for £410, in which condition the new 15-20-h.p. model of 10 mm. longer piston travel is marketed for £460. The 20-30-h.p. four-cylinder model is sold with five-seater body, but without hood, screen, horn, or electric lighting set, for £495. The design of the pistons has been improved to reduce to a minimum the likelihood of any ingress of oil and consequent formation of carbon deposit. A gear pump, immersed in oil and driven from the cam-

shaft, forces lubricant under a pressure of 15 lb. to the square inch to all the engine bearings save the gudgeon pins, which are lubricated by splash. A valve locked in position prevents the manufacturer's adjustment of the oil pressure being unintentionally disturbed. The springs are in all cases calculated for the precise form of body fitted.

THE £390 FOUR-CYLINDER AUSTIN CAR.

The 10-h.p. Austin car, embodying most of the firm's distinctive constructional features, having a bore measurement of 76 mm. and a piston travel of 89 mm., magneto ignition, Claudel carburettor, cone clutch, four-speed gearbox, bevel-driven back axle, detachable wood wheels, 9 ft. wheelbase, smart four Phaeton body of streamline form, one-man hood, double folding wind-screen, spare wheel, Lucas head-lamps and generator, three paraffin lamps, speedometer and all necessary tools, is sold complete for £390. Artillery wooden wheels are employed in combination with a stout section rim particularly suitable for the colonies. If the flanges are not made of ample proportions for overseas service, they are apt to be dented by impact with stones, thereby preventing the beads of the tyre coming away from the flanges when it is required to change pneumatics.

THE £390 FIVE-SEATER SUNBEAM.

The 12-16-h.p. four-guinea tax four-cylinder Sunbeam, of 80 mm. bore measurement by 150 mm. piston travel, with four-speed gearbox and bevel driven back axle is sold with five-seater body for £390. This pattern now enters on its third year, and is a type of car that has made much latter-day motoring history. It is furnished with sundry improvements, including the setting of the gearbox back 3 in. further from the flywheel to furnish a longer shaft and enable the two universal joints to be supplemented by a pair of metal discs sandwiching a rubber one, which is very effective in isolating vibration in that region of the car. The cooling surface has been slightly increased, the diameter of the steering wheel is $1\frac{1}{2}$ in. more, and the steering column is provided with a substantial support from one of the cross-frame members. There has been no occasion to redesign the suspension, but it has been much improved by the use of chrome nickel steel springs. The coachwork has also been greatly improved, the front seats being mounted to slide on rails and lock in any position, so that they are adjustable fore and aft to suit users of any physique. Ingenious patented means are also employed for preventing body rattling or creaking. The details of the work of constructing the doors should be examined. This machine, of course, gives fully 37-h.p., and is fitted with the latest pattern Claudel carburettor, which gives improved acceleration in combination with greater economy. The larger size of nominal 16-20-h.p. engine rating, having a 90 mm. bore and 160 mm. piston travel, is sold with five-seater body for £535, that price including a Rotax-Leitner dynamo electric lighting set.

THE £385 15-H.P. STANDARD CAR.

Apart from the $9\frac{1}{2}$ -h.p. four-cylinder light car mentioned last week, the Standard firm produces a 15.6-h.p. model of 79 by 121 mm. engine measurement, which is now fitted with a four-speed gearbox, and sold with four-seater body, five lamps, hood, screen, horn, and fifth detachable steel wheel and tyre for £385. The stonily designed gearshafts are borne on ball bearings, while the control on the gate-quadrant principle is so arranged that the hand-brake lever is on the inner side of the gate to facilitate the fitting of streamline bodies as well as to simplify the scheme of working the gear rods and levers. There has been no occasion to make any change in the 20-h.p. type, which, with five-seater body and the same equipment, costs £100 more. These vehicles are very conscientiously designed and manufactured at Coventry under the personal supervision of Mr. Cyril Maudslay.

THE £375 15-20-H.P. ARMSTRONG-WHITWORTH CHASSIS.

The world-famous engineering firm of Armstrong-Whitworth markets its smallest chassis of 15-20 nominal horsepower for £375, the motor having a bore measurement of 80 mm. and a piston travel of 135 mm., so that the volume is 2,710 c.cm. The clutch is of the many-disc sort, the gearbox giving four forward speeds. A worm-driven back axle.

detachable wire wheels, Zenith carburettor and dual ignition are employed. There is also a Colonial model at the same price with $2\frac{1}{2}$ in. more ground clearance. The purchaser selects his own coachwork details for fitting to the chassis. A quite new model introduced this season is also a four-cylinder vehicle of 20-30 h.p. rating, the bore measurement being 90 mm. and the piston travel 150 mm., and the chassis price £500. The carburettor is bolted directly to the block engine casting, thereby obviating the likelihood of air leak. Very light cast-iron pistons are used, the connecting rods being of high tensile nickel steel. The five bearing crankshaft is of proportionately large diameter. The clutch needs no oiling. Any liability of the change speed lever to jamb in action under frame distortion is obviated by carrying it on an arm from the gearbox.

THE £375 N.B. FOUR-SEATER.

Apart from the 20-40-h.p. Nazarro cars that cost £495 for the chassis, Newton and Bennett are the British concessionaires for the 15-24-h.p. S.C.A.T. car, which sells with five-seater body, detachable steel wheels, four-speed gearbox, disc clutch, rainproof hood, wind-screen, lamps, horn, and a combination pneumatic N.B. engine starter and tyre inflator, for £465, the bore measurement being 85 mm. and the piston travel 130 mm. There is also the 12-h.p. Italian-built N.B. four-cylinder car of 70 mm. bore by 140 mm. piston travel, sold with four-seater body, hood, screen, lamps, horn, and the firm's mechanical engine starter, for £375. This has also detachable steel wheels, bevel-driven back axle, and four-speed gearbox. The clutch is of the plate type; motor, clutchpit, and gearbox being combined on the three-point suspended unit principle. The clutch needs no lubrication. The clearance of the car is comparatively high, being $9\frac{1}{2}$ in. The engine starter is produced under the Harper patents, and has been proved serviceable for some seasons past. It is simple, consisting of a small modification in the gearbox that enables the driver, by a single pull at the gear lever, to start the engine from his seat. There are no free wheels or working parts in operation while the car is running. The device consists of three parts.

THE £350 ELECTRICALLY-LIT ROVER FOUR-SEATER.

The Rover car is made in one type only—a 12-h.p. four-cylinder vehicle of 75 mm. bore measurement by 130 mm. piston travel, marketed complete with four-seater body, rainproof hood, wind screen, fifth wheel and tyre, signal horn, and Rotax-Leitner dynamo and electric lighting set, for £350. If only a two-seater body is required the price is £331. This is one of the few middle-sized cars I know so designed that a three-speed gearbox, with all the consequent gain of quietude, strength, and simplicity, is sufficient for all conditions of service. The design and the manufacture have alike been proved right over a period of two years. The back axle is worm-driven. Neat ventilators are now furnished to the front seats for use in hot weather, while the purchaser has the option of six inches longer wheelbase. Longer wearing qualities and smoother action have led to the use of an endless belt for driving the fan behind the cooler. The petrol tank is no longer part of the dashboard but is fitted independently of it, so that it can be removed when necessary. It may further be noted that a Colonial model using Sankey steel detachable wheels, a straight front axle, stouter springs, gear ratios to suit the larger wheels and tyres, a 4 ft. $8\frac{1}{2}$ in. track, and overhead in place of underhung worm, is marketed as a four-seater for £25 more than the model for European service.

THE £333 11-16-H.P. ADLER CAR.

Apart from the 200-guinea light car referred to last week, the Adler programme includes an 11-16-h.p. water-cooled four-cylinder car of 67 mm. bore by 110 mm. piston travel, giving a volume of a fraction of $1\frac{1}{2}$ litres, which sells, complete with four-seater touring body, tyres, tools, but without lamps, hood, or screen, for £333. The 14-18-h.p. size also comes within the range of car under consideration, the price, including the same details of equipment, being £395. In this case the bore measurement is 75 mm. and the piston travel 118 mm., giving an engine volume of 2,080 c.cm. Four-speed gearboxes and bevel driven back axles are employed in both cases. The mechanical details of the models remain as before.

SUNDRY DE DION-BOUTON TYPES.

The De Dion Company, which for many years has numbered many medical men in its *clientèle*, acquired its reputation among them primarily through its provision of one and two cylinder cars, which, though of quite low prices, proved thoroughly satisfactory vehicles for professional purposes. Comparatively recently it has extended its programme, and, as was pointed out last week, it now includes four-cylinder chassis at prices not far off those formerly charged for the lower powered cars, and a 24-h.p. chassis with an eight-cylinder engine, vended at a sum probably not above that which a good many medical men are prepared to spend. The De Dion-Bouton chassis of the four-cylinder sort that come within the price stipulated by the average medical man are the 8-10-h.p. three-guinea tax model sold at £221; the 12-h.p. 3-guinea tax type at £275, the 14-h.p. 4-guinea tax size at £310, and the 18-h.p., having a bore measurement of 80 mm. and a piston travel of 140 mm., at £372. If a body of a plain sort is needed, coach-work and fittings should be procurable for another £100. The smallest model named is quite a new pattern, having a bore measurement of 56 mm. and a piston travel of 120 mm. The four-cylinder motor has a two-bearing crankshaft of proportionately large and heavy design. Cast steel pistons are used. Engine, flywheel pit, and gearbox are bolted up to form a unit.

THE £300 FOUR-SEATER 10-H.P. BAYARD.

The 10-h.p. four-cylinder French-built Bayard car, with 65 mm. bore measurement and 120 mm. piston travel, is introduced with four-seater body, three-speed gearbox, bevel driven back axle, Sankey detachable steel wheels, Solex carburettor, rainproof hood, wind-screen, fifth wheel and tyre, and five lamps, for £300. The 14-h.p. model that comes under the four guinea tax, having a bore measurement of 80 mm. and a piston travel of 130 mm., as well as a four-speed gearbox, sells with similar equipment of proportionately larger size for £385. The gear control is on the gate change principle in this particular model. In these vehicles the propeller shafts are enclosed in steel torque tubes. A still lower priced model is a four-cylinder 8-h.p. chassis, which is sold with two-seater body and without a spare wheel or tyre, but with all other necessary equipment, for £232, fixed wire wheels being employed.

THE £295 12-H.P. GLADIATOR.

The French-built four-cylinder 12.1-h.p. Gladiator car of 70 mm. bore by 110 mm. piston travel is sold as a two-seater complete with hood, screen, dicky, five lamps, horn, and spare wheel, or rim, for £295. The constructional practice embraces the firm's cylindrical three-speed gearbox and its own carburettor; otherwise, the car more or less follows out the conventional motor engineering practice of the day.

THE £285 SELF-STARTING HUMMOBILE.

The feature of the 15-18-h.p. four-cylinder Hummobile car for 1914 is that it is fitted as standard with the Westinghouse electric engine starter and car lighting outfit, four-seated body, English made rainproof hood, double-jointed wind-screen, electric horn, tool equipment, detachable rims and a spare, together with Michelin tyres, for £285. The chassis in the main follows conventional constructional practice.

THE £255 FOY-STEELE CAR.

The firm of Jarrott introduces a two-seater model, 14.3-h.p. four-cylinder Foy-Steele car of 76 by 127 mm. engine measurements, with three-speed and reverse gearbox, bevel driven back axle, five lamps, horn, hood, and screen, complete for £265, the price of the four-seater being £315. These machines were introduced to the market last year.

THE £230 11.9-H.P. PHOENIX.

The 11.9-h.p. four-cylinder Phoenix car comes under the three-guinea tax, having a bore measurement of 69 mm. and a piston travel of 100 mm. It is sold complete with hood, screen, five lamps, signal horn, tools, detachable spare wheel, tyre, and two-seater body with doors, for £230, the policy of the firm being out of the ordinary in that

such a detail as the number plates are included in the fixed price. This machine has a worm-driven back axle, magneto ignition, Stewart carburettor, three-speed gearbox, and 8-ft. wheelbase, while the width of the body is sufficient to render it possible for the car to accommodate three persons seated abreast. The shoe-shaped bonnet, accessible from three sides, and radiator in front of the dashboard is employed. For £55 more this vehicle is supplied with 18 in. longer wheelbase and a body to seat four or five persons, together with one-man hood and collapsible luggage carrier.

THE £225 10-12-H.P. BELSIZE TWO-SEATER.

The four-cylinder water-cooled 10-12-h.p. Belsize car of 69 mm. bore measurement by 130 mm. piston travel is sold complete for £225, the purchaser now having the option of worm or belt-driven back axle. A feature of this car is the unit system of combining the motor, clutch, and circular gearbox carried in a trunk which supports the clutch, and which is bolted at its forward end to the back of the crank-case. A practical point is that it is easy to withdraw the gearbox with its foot-brake from the rear end of the trunk, a coupling between the gear shaft and the clutch shaft being furnished to this end. The valve tappets are now adjustable, and springs have been introduced to keep them up to the heels of the stems, thereby making for silence of action. The engine is oiled under pressure, and a single tapered form of spring is furnished to the back of each of the rear main springs to act as a shock absorber. The price includes two-seater body, lamps, horn, tool kit, hood, and wind-screen. The 15.9-h.p. model is sole as a four-seater for £360, the equipment including electric dynamo for lighting the car, together with accumulators, lamps, and switches.

THE £225 15-18-H.P. BUICK CAR.

From America comes a price proposition in the 15-18-h.p. four-cylinder water-cooled Bedford chassis of bore and stroke measurements each of 95 mm., with magneto ignition, Zenith carburettor, leather cone clutch, Baker rims, three-speed gearbox, bevel-driven live axle, sold complete with London-built Bedford two-seater body, five lamps, horn, speedometer, spare rim, hood, screen and number plate, for £225.

THE £220 10-H.P. TURNER TWO-SEATER.

The 10-h.p. four-cylinder, block engine, water-cooled Turner car of 60 mm. bore measurement by 100 mm. piston travel with three-speed gearbox and worm drive, has a channel steel frame and two cross bearers carrying the subframe that supports the motor and gearbox. The back axle is now of the enclosed tubular type, while the ignition is fixed, therefore there are no levers on the steering column or wheel. The standard equipment provides waterproof hood, two acetylene head-lights, the side and tail lights being of the oil sort. The radiator is of pointed design and the rear springs are of the inverted quarter-elliptic type, wire wheels being fitted. The firm also introduces a new 12-h.p. model of 69½ mm. bore measurement by 120 mm. piston travel, sold as a two-seater for £275.

THE 200 GUINEAS FOUR-SEATER BRITON CAR.

The four-cylinder Briton cars are built at Wolverhampton, the 10-h.p. variety having been introduced a year ago, since when the firm have found it necessary to concentrate the major portion of its work on the output of this type, which is supplied with four-seater streamline body, an engine of 68 by 120 mm. dimensions, gate controlled three-speed gearbox, three lamps, signal horn, hood and screen, for 200 guineas. A two-seater type is marketed with the same fittings for 175 guineas.

THE £200 9-H.P. HILLMAN LIGHT CAR.

The British-built 9-h.p. four-cylinder Hillman light car of 60 mm. bore measurement, with a piston travel twice as long, is sold complete, with two-seater body, hood, screen, five lamps, horn, spare wheel and tyre, for £200. The firm's other enterprise is the production of a 13-25-h.p. six-cylinder model of the same engine dimensions, having a bevel instead of a worm-driven back axle, but retaining the other mechanical features, including detachable steel wheels, three-speed gearbox, leather cone clutch, Solex

carburettor, magneto ignition, and sold with four-seater body complete for £480, including a spare wheel and tyre. This is the smallest British-built six-cylinder car.

THE 190 GUINEAS MORRIS-OXFORD LIGHT CAR.

The Morris-Oxford two-seater light car, which has been familiar on the roads during the last twelve months, has been considerably improved in detail for 1914, and is marketed complete with hood, screen, five lamps, horn, and a spare wheel without a tyre, for 190 guineas, the bore measurement being 60 mm. and the piston travel 90 mm. A White and Poppé carburettor is employed, together with magneto ignition, clutch of the many disc type, three-speed gearbox, worm drive, and Sankey detachable wheels. The wheelbase has been lengthened to 7 ft. 6 in., so that there is room for the fitting of a dicky seat if required, while the track has been widened to 3 ft. 8 in. The stronger back springs are now underslung, and the back axle has been modified in details of design. A complete worm wheel is now used in connexion with the steering details, and the braking has been improved.

THE £190 8-10-H.P. MARLBOROUGH CAR.

The French-built 8-10-h.p. four-cylinder Marlborough car of 59 mm. bore by 100 mm. piston travel, having magneto ignition, Claudel carburettor, multiple disc clutch, Sankey detachable wheels, three-speed gearbox, bevel-driven back axle, spare wheel and tyre, two-seater body, hood and screen, is sold complete for £190. The stranded cables formerly used for the side-by-side brakes on the back wheels are replaced by rods provided with convenient adjustments.

THE £168 CALTHORPE MINOR TWO-SEATER.

The four-cylinder water-cooled block engine, 10-12-h.p. Calthorpe Minor car of 62 mm. bore by 92 mm. piston travel with magneto ignition, Zenith carburettor, Hele-Shaw plate clutch, three-speed gearbox, steel detachable wheels, bevel driven back axle, body, lamps, hood and screen is marketed at £168. A 12-15-h.p. model, with four-seater body, a bore measurement of 69 mm., a piston travel of 125 mm., and detachable wire wheels, retails at £299. The cooling is by the natural circulation of the water, a pressed steel frame being employed in both cases. The smaller model retails with coupé two-seater body for 190 guineas.

THE £150 PILOT LIGHT CAR.

The 10-h.p. four-cylinder Pilot light car, employing the friction form of power transmission and thereby differing radically from conventional constructional methods, is marketed with wire wheels, final chain drive, fixed Bosch magneto ignition, Zenith carburettor, and two-seater body for £150. The carburettor can be adjusted to run on benzole for those who do not object to that form of motor fuel. This vehicle is staged on Stand 21 by Friction Cars Ltd. Its engine is the four-cylinder water-cooled Chapuis-Dornier engine which has a bore measurement of 60 mm. and a piston travel of 110 mm., so that it comes under the three-guinea car tax and has a volume of 1,245 c.cm., otherwise approximately a litre and a quarter. The lightness of the vehicle enables it to have a ready acceleration, which is further assisted by the mode of power transmission through friction drive, so contrived that there are what would be called five forward speeds.

COACHWORK AND ACCESSORIES AT THE MOTOR SHOW.

As on the occasion of former Shows, so in connexion with this one the Coachwork and Accessories sections contain a number of important displays each by specialists. It is impossible, however, to review these in detail. Suffice it that coachwork is in the main developing along rational lines. It can scarcely be said that any fresh degree of engineering talent appears to have been introduced to the problem of motor body construction this year. Progress is instead revealed chiefly in the direction of employing better proportions and making more ingenious use of the space available, as instance the 16-h.p. Leon Bollée car with a new streamline Connaught torpedo two-seater phaeton, having two extra seats. The movement towards the furnishing of wider doors, particularly in closed carriage work, is illustrated in the six-cylinder Siddeley-Deasey limousine-landaulette of the

Connaught-Davenport type, having domed roof and frameless glass windows. The firm introduces a 16-h.p. four-cylinder Leon Bollée car of accessible design. Morgan specializes in medium sized bodies for doctor's work, including ingeniously contrived coupés; while a new design of four-seater coupé-cabriolet on a 15-20-h.p. Vinot chassis is shown by Alford and Alder. There is only one wide door on either side of this vehicle, the near side front seat being constructed to fold up and revolve. The scheme of the windows allows plenty of light to flood into the vehicle on both sides. Standard coachwork has been very appreciably improved by the majority of the British manufacturers.

Among the novelties in the tyre and wheel section is the new twin Dunlop detachable wire wheel that will fit existing single detachable wire wheel inner hubs, and the spokes of which are ingeniously set so that each rim is a driven member without the aid of intermediate bands that set up unnecessary stresses and which provide harbours for stones and so forth. This firm, in common with sundry other leaders in the tyre industry, announces appreciable reductions in the cost of its pneumatics without change in the quality or quantity of the material; or of the workmanship. The Avon Indiarubber Company of Melksham, Wiltshire, introduces a "Sunstone Special" type of pneumatic with extra thick tread, providing the maximum rubber at the point of contact with the road. The surface of this tread is flat, with narrow, clean-cut, transverse grooves. There is also a square type of tread with fluted ridges on its wearing surface. A number of tyre makers, including the Continental firm and the Spencer-Moulton concern, exploit the policy of marketing what are called oversize tyres, otherwise pneumatics of proportionately large section made to fit existing rims that hitherto have only accommodated tyres of smaller section. This method is claimed to provide more luxurious riding, and in spite of the slight initial increase of cost, to achieve economy of wear.

Small Harvey-Frost tyre vulcanizers for the use of private motorists on the pioneer system of this sort are introduced variously under the title of the "Car" and of the "Baby" vulcanizer. The system of operation remains the same, but the scope of their employment has been materially increased by a new attachment introduced to enable internal repairs to covers to be readily and quickly carried out. The device consists of a hollow aluminium mandrel, into which steam is conducted through a pipe screwed to an adaptor at the top of the vulcanizer, the pipe also serving as a supporting column. The instructions issued by the firm are simple, and the developments now incorporated in the instrument will doubtless lead to its being more widely employed in private service. Another ingenious invention is the Triplex safety glass for windows and screens that is built up of three-ply of glass sandwiching two films of celluloid. It does not break like ordinary glass, but merely "stars" when hit by stones.

LONDON MEDICO-PSYCHOLOGICAL CLINIC.

A MEETING to inaugurate the London Medico-Psychological Clinic for the treatment of nervous diseases, an account of the objects of which was given in the *BRITISH MEDICAL JOURNAL* of July 19th, was held on November 5th in the Botanical Theatre of University College. Lord SANDWICH, who was in the chair, expressed his belief in the immense power exercised by the mind over the human body. He said that, although he knew nothing of medical or surgical science, he had had great experience of healing. During the South African war he had received some sixty wounded officers into his country house, and during the whole time he was at home there had never been a doctor or a nurse in the place. He himself had acted in both capacities towards his guests, and he had been both surprised and gratified by the successes he had obtained. He went on to say that there were few serious maladies that he had not treated with success, and he believed he could say with truth that he had never failed to relieve people in agonies of pain. He had attended people in palaces, in cottages, in hospitals, and in homes; and his patients had included a Hindu monk in his monastery, a Mohammedan in his mosque, and a Hindu princess who had travelled