THE OLYMPIA MOTOR SHOW.

CONCLUDING REVIEW FROM THE MEDICAL MAN'S STANDPOINT.

BY

H. MASSAC BUIST.

THE eighteenth yearly International Motor Car Show, which closes at Olympia, Kensington, at 10 o'clock on Saturday night, must be pronounced by far the greatest of the series, and the one which has made the most striking appeal to the medical motorist. It contains even promise of better things to come. Thus the very largely used system of grease-gun lubrication for the chassis, which revolutionizes the vexed problem of proper yet easy maintenance, may in a year or so be further simplified by the use of a new material, the Belflex-Hobson fabric spring-shackle engine and torque arm mountings. This means that spring-shackles—one of the most frequently neglected parts of a vehicle from the point of view of lubricant, and a great source of squeaking—can be replaced by what is really a development and adaptation of the principle of the Hardy universal fabric joint, which is a cheap and successful substitute for one of the most expensive and complex, as well as the hardest worked, pieces of a car mechanism—namely, the universal joints at either end of the propeller shaft. Belflex material comes from America, but is as yet no further advanced in general application there than it is here, though we shall certainly hear more of it in twelve months' time. By the use of this material for such parts as shackles, and so on, it would not be necessary to supply them with lubricant.

COACHWORK.

De Dion Bouton, as stated last week, introduces this year, on a 12/28-h.p. four wheel brakes chassis, an "occasional

De Dion Bouton 12/28-h.p. with London-built coupé-cabriolet body.

four " coupé type of good interior illumination and notably easy access. The seat beside the driver is tilted forward when it is desired to enter, or to leave, the rear collapsible seats, which are accommodated very neatly when not in service. Regarding cars standardized with complete equipment in the form of four- or five-seat open-work bodies, it is to be noted that a great number are provided now with rear windcreens, also that most of these devices enable the screen to be thrust sideways to give convenient entrance to the car when the screen is in use. The Humber curtaining scheme on the all-weather type of body is one of the neatest hitherto designed—alike from the points of view of erecting it in a moment and of stowing it quite out of sight and most conveniently when not in use. It can be stated that the all-weather curtaining schemes on most cars really afford adequate protection, together with the provision of good visibility for safe driving. Further, convenient driving is assisted greatly by the fact that this year a very large number of makers, particularly of cars of limited chassis space, nevertheless contrive to provide independently adjustable front seats to accommodate the particular requirements as to leg length, and so forth, of the individual occupants; yet many of these devices are of types that do not develop rattle with wear. Quite extraordinary things are being done in the matter of coachwork at really cheap prices—for instance, the new four-seat open touring all-weather British-built bodies on the Citroën chassis.

The most notable entirely new contribution from abroad to the problem of the small scale car is provided by Citroën on a 11.4-h.p. four-cylinder engined chassis. This maker has arrived at the conclusion that steel, instead of wood, should be used for the bodies. His new car is a four-seat saloon body on a 11.4-h.p. 1,453 c.cm. four-cylinder engined chassis; one advantage of the steel body is that it gives proportionately a greater range of vision to driver and to passengers because the posts are the smallest ever devised. Other gains of this construction are the lightness without

Vauxhall 14/40-h.p. with special Mann Egerton two-seater body.

sacrifice of strength, freedom from distortion and rattle, and the quality of being fireproof. This four-seater, as exhibited, is sold retail at £325. The Citroën works are now producing 300 cars a day, which is a record for the European industry and an explanation of the low scale prices ruling this year. As mentioned in these columns a month ago, Citroën was the first big scale maker to standardize balloon tyres on all his models, to the great improvement of their riding qualities.

This system is in striking contrast with the flexible, non-rigid fabric Weymann method of construction, which could have been evolved to solve the problems of squeak and distortion only through applying aircraft engineering practice. This type of covered body is listed as an alternative by a number of chassis builders. Its use is for the permanently covered type of coachwork, and it is available in that form even on so small a machine as the 8-h.p. two-cylinder air-cooled engined Rover. The Weymann body is manufactured under licence by Singer among many others. Singer uses detachable pneumatic upholstery. Wolseley, Lancia, and Singer show new-style fabric body materials that are really British in conception, whereas the original fabric body patterns were not.

Of bodies built to special design there is a clever provision of what one might style a "semi-coupé" in the Mann Egerton blue granite two-seater, with commodious and comfortable dickey seat, provided on a 14/40-h.p. developed four-speed right-hand controlled Vauxhall chassis, the trimmings being blue antique leather. The body panels are done in aluminium, and are equipped with quick operating hood fittings, together with all-weather side curtains that open and close with the doors; the price of the car complete is £650. This type of body can be

The Austin four wheel braking system.

built broader at an inclusive price of £200. The S. F. Edge patented "open-closed" compact light-weight body that is usable either as a two-three seat open touring car or as a coupé type is clever, the six-cylinder chassis being available now with longer wheel-base, also with a four wheel braking system. The Austin four wheel braking system, illustrated above, is so arranged that the

pedal action applies braking action to all four wheels in synchronism, with suitable compensating mechanism, provision being made for quick and easy adjustment. A rod connects the pedal with the brake-operating cross-member, the actual connexion to each wheel being by a cable.

HINTS TO USERS OF "BALLOON" TYRES.

The increasing use of shock-absorbers, combined with the employment of low pressure tyres, serves as an intermediate makeshift measure in dealing with the problems of suspension. It may be stated broadly that a happy compromise is being reached, though in connexion with the low pressure tyre it is to be observed that Minerva and Willys-Knight use a semi-balloon tyre, as do some others. On the large heavier car constructions the semi-balloon tyre does not tend to drag at the corners. Regarding this development, Lieut.-Colonel Sealy Clarke, President of the Society of Motor Manufacturers and Traders, uttered a useful warning in the *Motor* concerning the manner of obtaining the best results from low pressure pneumatics. This type needs to be watched more carefully to see that it is at the correct pressure than does an ordinary tyre, otherwise undue cost for damaged tubes and wall wear will follow. For instance, with a normal tyre run at a pressure of 65 lb. to the square inch, it matters relatively little that it is being run at 60 or even 55 lb.; whereas the loss of 5 lb. in a balloon tyre inflated at 25 lb. per square inch will alter the character of its riding altogether, as also the strains imposed on it, as well as its behaviour at corners, and so on. It is not possible to forecast at present what wearing life can be expected of balloon tyres, because the only statistics available are those by experts. Data are needed concerning what happens in the hands of the inexpert—otherwise the general public. There is no reason to anticipate a shorter wearing life than with normal section tyres, provided attention is given to correct inflation. In any case the use of the balloon tyres in cars of poor suspension, or with relatively weak springs, should result in economy in shackles, wear, and so forth. But all tyre companies rightly stress the need continually to make sure that one is not driving with such pneumatics underinflated. The consensus of expert opinion at the moment is that any under-inflation beyond 10 per cent. spells actual danger. The Goodyear company states that balloon tyres are for comfort, not "stunting"; therefore nothing could be more foolish than to drive over the edge of a curb or similar obstruction with a car shod with low pressure tyres, because the shock to the thin walls may cause irreparable damage.

DOUBLE SLEEVE VALVE ENGINE DEVELOPMENTS.

It is more than half a generation since an American, who knew nothing whatever about engineering, Mr. Charles Y. Knight, discovered how to make a liquid fuel internal combustion engine which would function silently because,

instead of having poppet valves, he inserted two sliding sleeves, with slots in them, in the cylinders. The principle was tried in America, but nobody could make a success of it. The invention was then brought to Sir Edward Manville, chairman of the Daimler Company in this country, and Mr. Percy Martin experimented with it. At first engineers said it was impossible because the sleeves could not be lubricated. But a

natural law, as distinct from man's ingenuity, looked after that automatically: the sleeves lubricated themselves by capillary attraction. In the issue it was found that this was—and it remains—the only type of motor car engine which works best in the natural condition of a gas engine—namely,

when the sleeves are dirty; for example, gas-tight with lubricant. As soon as the type was made successfully the Daimler Company pioneered its introduction to the public by putting it to a week's test on the bench, and the challenge issued by the company at the conclusion of that successful test still remains to be taken up. Silent-acting valve gear on motor cars in general dates from, and is a consequence of, the introduction of that engine, which has been taken up under licence by Mercedes in Germany, by Panhard in France, by Minerva in Belgium, and by Willys-Knight in America. Today, among other firms exploiting the type, is Voisin, the aeroplane builder, who now makes cars. The licencees pool their improvements. For a long time the sleeves were made of cast iron. Much of the improvement in the performance of these engines is due to the more recent use of steel

The Daimler pocketless combustion chamber.

sleeves. In the beginning, too, the cylinders were cast in pairs; now most of the licencees make monobloc engines, even as are the poppet valve types, with the result that much better rigidity is gained. It was in connexion with this engine that Professor F. W. Lanchester evolved his harmonic balancing gear for dealing with secondary inertia forces in the crank case. Even the American version of this engine, made by Willys-Knight, has been improved greatly in performance this year by altering the position of the valve ports and by applying this Lanchester harmonic balancing gear. The American types have four cylinders only, and therefore need it even more than do the six-cylinder types, which are the more generally favoured system in Europe. These engines are to-day standardized with much higher compressions. They are supplied to the King's four new cars that replace the machines with the same sort of engine which his Majesty has had in use for thirteen and fourteen years respectively.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

(Continued from page 725.)

The sittings of the Royal Commission on Lunacy and Mental Disorder were resumed on October 21st, the Right Hon. HUGH P. MACMILLAN, K.C., presiding.

Sir CLAUDE SCHUSTER, permanent secretary to the Lord Chancellor, desired to amplify an answer which he gave at the previous hearing when he said that he hoped a lunatic in confinement did not possess or would not be given the right to demand a public inquiry as to whether he had recovered. He explained that he held this opinion because (1) lunacy was a disease whose cure or alleviation was a gradual process, and the determination whether the patient had reached a point at which he might properly be released was a matter peculiarly unsuited for public inquiry; (2) the function of those who had to determine whether the patient was to be released or further detained was not to investigate any charge against a patient as if he were an alleged criminal, and it would be very undesirable that the local authority or the person in charge of the asylum should be forced into an office analogous to that of prosecutor; and (3) a very large proportion of lunatics considered that they were wrongfully detained, and every one of these people would have the right to demand an inquiry; a lunatic's condition was unsuitable for public discussion, and the details would be often unpleasant and sometimes humiliating for the patient, and detrimental to his interests.

Evidence of the Ministry of Health.

Mr. L. G. BROCK, Assistant Secretary of the Ministry of Health, described how certain powers and duties with regard to insane persons had been transferred from the Local Government