

back seats should be protected from the weather and not be separated by a glass partition. As to the interior decoration there is a tendency to use polished wood instead of padding. This seems an appreciable improvement both from the point of view of hygiene and that of general finish and attractiveness. In the upholstery, drab and fawn-coloured twill or plain cloth has now generally superseded Bedford cord.

Novel Gregoire Machines.

One of the most curiously shaped autos in the Salon is on the Gregoire stand. The coachwork on one of the smaller chassis consists of a two-seater inside-steering body which has all the appearance of a Sedan chair, with windows in front, rear and sides, emerging from the centre of a low "torpedo" body. The seats are low, but there is plenty of room. When the front window is shut the auto is completely enclosed. Inside the turtle-back stern is a folding seat and lockers for accessories, although when "hatched down" there is no sign of a seat. The coachwork is well finished and the auto is declared able to do nearly 100 kilometers an hour.

Another interesting machine on the Gregoire stand is one designed specially for aviators. The body is built low in the form of a double berline with five seats, two in front and three in the rear. Ample luggage or provisions can be carried, and conveniences for the conveyance of aeroplane parts are provided. Thus a propeller can be hitched on to brackets on the top of the body, while at the rear is a chest for spare aeroplane parts. It is claimed, too, that the machine would be comfortable enough for sleeping in in case of necessity.

For the "Moderately Wealthy."

In the latest types of automobile bodies, the last vestige of resemblance to the old horse-drawn carriage has disappeared. Coach-builders are now completely emancipated from the traditions and ideas which enslaved them from the very advent of the automobile, and led them to copy, for the purposes of mechanical road-traction, the antiquated form of a hackney carriage or other equally inappropriate but respectable conveyance.

The revolution may be considered as definitely accomplished with the newest creation of the firm of Rothschild, Rheims and Aseher. This is a superb limousine called, because of its shape, the "Obus," shown on a 30 h.p. F.L.A.T. chassis. It is entirely in aluminium and is extraordinary light.

While the normal weight of a limousine of similar size is 600 kilos, the "Obus," with all accessories, turns the scales at only 470 kilos. There are six seats, in pairs, all inside, including the driver's. With the exception of the two rearmost, all the seats are folding and have comfortable backs. The centre pair fold up absolutely flat against each other, thus taking up little space when not in use. One of the many features of this limousine, therefore, is the ample space inside. It is possible, indeed, to move about from place to place with perfect ease; even when the six seats are occupied places can be exchanged quite comfortably with no risk of treading on corns or barking other persons' shins.

The upholstery is luxurious in soft kid, and the springs are such as to make each seat, with its padded back, a genuine armchair. There are only two doors, which is a novelty to six-seated limousines. Another feature of the "Obus," and one that marks a new tendency in automobile body-building, is that it is entirely jointless. It is built like a boiler: riveted instead of jointed. The carriage consequently is damp-proof, and is not affected by the worst of weathers. All the wood work is in violet ebony incrustated with metal. Patented devices make the opening or shutting of the windows an easy task. There is no leather strap at which to tug. At the rear of the body is a rounded prolongation constituting a "hold-all" coffer of large capacity, with space for spare tires. The colour of the "Obus" is similar to that of the barrel of a gun, and is very effective and in harmony with the form of the carriage.

It should be observed that the "Obus" style of limousine can be built on any of the F.L.A.T. chassis, which means that the purchaser may have it as a touring carriage, or for speed work. It has interested the French Minister of War, and it is highly probable that the "Obus" will be adopted for military purposes. The

entire conception of the "Obus" is based on logical and scientific principles. Its unbroken lines reduce head resistance to a minimum.

A "Cheaper" Edition.

Further on is another limousine, also built by the Rothschild firm, which, although differing in shape from the "Obus," preserves all the latter's main characteristics. It is fitted on a 50 h.p. Mercedes chassis. Richly constructed as are all the bodies built at the same works, it is somewhat simpler than the "Obus," and is designed for the "smaller" purses. One is struck again with the same unbroken lines seen on the "Obus," while the front and driver's seats are under shelter, enclosed all round in the continuation of the hood. The inside is similar to that of an ordinary limousine. There is a new "strapontin" system, however, of folding the front seats so that they sink out of sight when unoccupied and leave the space quite free. Windows are of the "eremillere" automatic pattern, and at the rear of the body is a rounded coffer like that of the "Obus."

On a 24 h.p. Turcat-Mery chassis there is an example of the ordinary type of limousine turned out by Rothschild, Rheims and Aseher. It possesses all the principal features of that firm's coachwork. One notices the suppression of the moulding, and although the general character of this limousine is less luxurious than that of the other two it is a marvel of artistic finish and sound, practical design and build. Delicate metal incrustation lines the carriage interior. Folding seats are a feature, but the driver's seat is outside, and the lines of the limousine are consequently less continuous than those of the "Obus."

The same firm also shows one of the fashionable "flush-side," or torpedo bodies, luxuriously built, with handsome mahogany work everywhere. This is a particularly comfortable though light body.

Another very interesting model is a coupe built on a 15 h.p. Delaunay-Belleville chassis. In the designing of this model M. Aseher was confronted with a difficult problem. The purchaser for whom it was ordered insisted that, while presenting every appearance of an ordinary coupe, it should not weigh more than 250 kilos. Sacrificing everything save solidity, its lightness, and suppressing all that was not absolutely needful, M. Aseher successfully solved the problem, and the finished coupe weighs only 236 kilos. Hollowed wood with steel bands inside was used. The roof is simply canvas stretched on aluminium. In point of comfort the coupe is second to none in spite of its lightness. Moreover, the builders guarantee the durability of the coachwork just as they do their ordinary bodies. As may be supposed, however, such a "feather-weight" coupe costs very dear, on account of the extra work. It has a compensating advantage, though, in the fact that the tires will wear longer on it than on a heavier body.

Another example of Messrs. Rothschild's work is a landaulette limousine on a Charron chassis. Shaped in the classic style, but with the modern rounded door panels, it is a jointless body like all others of the latest model. The woodwork is remarkably fine. It is of sycamore, which when varnished, has all the appearance of a rich-coloured marble.

A specimen of the ordinary type of "torpedo" body, built for speed, is on a 30 h.p. Panhard chassis. It is extremely simple, coloured effectively, like gun-metal, low-lying and long and graceful of line. There is a big case behind for tires and provisions. The "torpedo" body, of course, is an open carriage. It is low-seated, and its sides are all flush, presenting one straight line from end to end.

With few individual differences, the other great body-builders, like Mullbacher, A. Renault, Vanvooren and Labourdette, show limousines, coupes, torpedoes and double phaetons that follow standard models. Variations of the torpedo, however, are to be seen, some of them being designed in the form of the two cab-shaped bodies adapted one to the other. Others have a cap-shaped seat in front, with high doors and an appropriate tonneau back portion, generally rounded. Nearly all the two-seaters are also of the torpedo pattern, many fitted with landaulette or cabriolet heads. One of the smartest is the "Connaught Cosy," on the Leon Bonnee stand.

A new general feature in the coachwork exhibited at the Salon is the attention given to side platforms. Some of the latter now have numerous grooves to catch the mud from passengers' shoes, and small holes are pierced to allow water to drain off. Gridiron footboards, consisting of a series of long bars, are also numerous and are elegant as well as practical, especially those topped with fluted brass strips. A number of builders have revived an early nineteenth century idea in covering the panels entirely with cane.

There is much improvement to be noticed in windcreens. Time was when these were so designed that there was no alternative but to leave them wide open if driving was to be safe in fog or rain. Now one sees many excellent devices to enable the screen to be opened a few inches, allowing a clear view ahead, while letting in very little wet.

The Ford Company's Display.

The Ford Company, the American and Canadian manufacturers, shows one of its standard four-cylinder 20 h.p. chassis, with three different forms of bodies, including its new famous two-seater and a smart double phaeton. The Ford automobiles for France come straight, fully packed, from the works at Detroit; it seems that the French tariff does not hinder American automobile business in France. The Ford output for 1910 was over 30,000, and for 1911 is expected to be near 50,000.

Other Attractive Displays.

The most noticeable change in the models exhibited by the Peugeot firm is in the rear axle, a shaft-drive being employed instead of a chain drive, with a double reduction to the rear live axle. The gear-box is of the "selective" type. On each of the two Peugeot chassis the motor is the single casting V type.

The Darracq Company shows, among other models, a six-cylinder "chassis" which is noticeable by reason of the adoption in it of the worm drive. It should be mentioned that the latter does not seem to find favour with French firms in general. On the Darracq chassis the worm is placed above the axle.

The Rolland and Pillain machines furnish a novelty in the matter of brakes. A triple force pump, worked from a pedal, is connected to internal-expanding brakes fitted to the four wheels and distributes to them under high pressure, operating all of them simultaneously. No mechanism is used to obtain automatic compensation.

Another new feature is the Simplicia frameless chassis whose engine gearbox, steering and rear axle form a single unit.

The different chassis shown by the Charron firm bear witness to the constant research of its engineers after simplicity and accessibility. This applies especially to the newest model, a six-cylinder 25 h.p. The radiator is at the back of the motor, so that complete accessibility is obtained. The circulation is by thermo-syphon, and the petrol tank, instead of being fitted under the seats, is mounted on the dashboard, allowing constant control over the fuel by means of a glass gauge in the centre of the tank. A four-speed gear-box is fitted, a feature of which is the internal gear in the place of a dog-clutch for the direct drive.

The Hispano-Suiza exhibition includes a chassis that is practically a duplicate of the winner of the Coupe des Voitures at Boulogne. The four-cylinder Monobloc motor has bore and stroke of 80 mm. and 70 mm. respectively, almost the highest ratio in the show. One of the new details of the Hispano-Suiza is an auxiliary air-control obtained by means of a lever on the dashboard. A centrifugal pump secures forced circulation for cooling purposes, the flow being through a honeycomb type of radiator. This is one of the firms which have adopted wire wheels. The latter are fitted to the auto which won the voiturette contest and which is to be seen on the stand.

Changes on the Hotchkiss four-cylinder models have been made with a view chiefly to accentuate the simplicity of these machines and of rendering them more silent. The engine of the 12-16 h.p. model has had its stroke increased by 10mm. The engines of all the Hotchkiss models are fitted with four-speed gear-boxes.

It would be impossible to give a detailed account of all the improvements to be seen at the Salon, those I have described above being the most marked of this year's exhibition.