a necessity for every medical graduate. The essentials of a post-graduate course were, first, clinical practice; then certain specialties, such as ear, nose, throat, women's and children's diseases; and thirdly, laboratory work, for it was important that the practitioner should be able to understand the main facts elicited by the laboratory, and be able to submit his specimens in a competent way. A great many specimens sent up from the country to the central laboratories were worthless, and the information supplied to the pathologist so meagre that it was impossible for him to aid the practitioner in anything beyond the mere outlines of diagnosis. A place should be found in the post-graduate course for instruction in the early diagnosis of disease, particularly those three or four diseases which were the main cause of invalidity. The returns of sickness benefit under the Insurance Act (taking a three-year average) revealed that 270,000 working years were lost per annum through absence from work on account of sickness, and this did not include maternity, sanatorium, or disablement benefit. Preventive medicine had not only to do with drains and infectious diseases, but with the great body of preventable or largely preventable disease. He had worked out the records of five typical insurance practices in as many cities in order to discover what the maladies were which caused this great invalidity. Briefly, they were dyspepsia, bronchitis, and all sorts of minor maladies. The burden of invalidity due to dyspepsia was prodigious. Would it not be well for post-graduates and practitioners generally to have more assistance in arriving at the early diagnosis of alimentary conditions? The same thing applied to early mental aberrations, to the applications of orthopaedics to simple malformations, to the early stages of disease of the eyes, and of tuberculosis, particularly among children, and possibly also to war neuroses.

The Need for State Aid.

In all the medical schools the installation of a system of proper, efficient, and continuous post-graduate instruction should be made a matter of grant. A medical school should not receive from the State substantial grants year by year unless there was provision—separate from that assigned to the medical students proper—for the men who had passed their final examinations. Post-graduate teaching should be given at the hospital, made as accessible as possible, and at a reasonable fee. A great many hospitals all over the country could be used. In every county, cottage, and isolation hospital it should be possible for the practitioners of the vicinity to obtain further clinical practice and experience. It had been found, particularly in London, that the consultant on the hospital staff was often able to give only the residuum of his life and strength to hospital teaching. Some method must be devised by which it would be made to pay him to give the major part of his energies to hospital work and the smaller part to private practice. This would not cover all consultants, many of whom would continue to prefer their lucrative practice; but the man who elected to give his main strength to teaching should be adequately and continuously paid, so that it was worth his while to give to his teaching something more than a casual attention. In the new clinical units which would be formed out of this arrangement some provision for post-graduate teaching should be included. It was evident also that in various parts of the country a system of hospitals and clinics for insurance and other practice would be established. The country had no hospital system; it had hospitals but no co-ordination of hospitals, and, although voluntarism in hospitals should be retained as a valuable thing, a good deal of organizing and unifying was necessary in order to bring about a hospital and clinical system. Here would be a golden opportunity for the introduction of post-graduate courses. In every county in time there would be a network of hospitals and clinics, in association with which a thoroughly sound system of post-graduate teaching might be constructed. He believed that any such post-graduate undertaking would have to be built on what he thought were the entirely admirable lines of the course at the Post-Graduate College of the West London Hospital.

THE large silver Carnegie medal for heroism has been awarded to Captain Ottavio Calamita, a medical officer of the Italian army, for saving a soldier from drowning in the dangerous canal of Mirano at the risk of his own life.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

FURTHER FEATURES OF THE PARIS SHOW.

THE Paris Motor Show no doubt gave the medical man the impression that post-war motoring is for rich men only, so studiously had the French firms, old and new, avoided an attempt to produce a cheap car, alleging that it is impossible in Europe in this transition stage owing to the depreciated value of currency whereby the raw materials of production have to be imported under unfavourable terms, by reason of the high shipping rates, and because the labour situation is so dishearteningly unstable. Nevertheless, there are not lacking signs that there is a sufficient proportion of firms with ideas and enterprise presently to compel those who will not break new ground either to retire from the industry or to show more pluck. Though all established French and Italian houses were represented at the Exhibition, which closed on October 19th, there is really no justification for occupying space by describing the bulk of their exhibits, which followed purely conventional pre-war practice. From a feature introduced here or there, such as the partial use of aluminium for engine details, it would appear that even these conservative ones have tried to break away; but that, for the rest, they have got so stale, possibly as the result of war exhaustion, that they are barren of ideas.

Taking the exhibits in the gross, it is positively amazing to discover that in quite 90 per cent. of examples there has not been the slightest attempt to lighten weight. Indeed, most appear to have built heavier than ever. Evidently war experience has shown the Continental industry, as it has our own, the need to provide more rigid frames; but we do not find any evidence, such as Armstrong-Siddeley, Daimler, or Napier, furnish in this country, of the solution of the problem by using higher grade materials, a more simple design, and a deeper channel section alike for the longitudinal and for the transverse frame members. Renault duplicates the longitudinal members over the rear part of the chassis, which strikes one as a complication, though for the rest this pioneer French manufacturer stands out prominently as having eliminated a number of features from his pre-war chassis schemes that were never complicated. He is singular, too, in retaining the slipper type of bonnet with dash in front of the radiator.

ENTRY OF THE AIRCRAFT INDUSTRY.

In this country we are to expect one or two notable contributions from the aircraft industry, such as that of the Avro Company, which is going to show us one version of how to build a relatively low-priced, medium-sized car of light weight but ample strength. Of the members of the French aircraft industry three have started motor manufacturing and were represented at the Paris Exhibition, Henry and Maurice Farman, Gnôme et Rhône, and Gabriel Voisin. None of them attempts to build a light car or a cheap one. The two former build large six-cylinder, overhead valve-engined vehicles of conventional chassis scheme, retailing, without coachwork, respectively at 48,000 and at 45,000 francs; and the last-named displayed a four-cylinder, sleeve-valve-engined chassis of the middle size, with a bore measurement of 95 mm. and a piston travel of 140 mm. In none of these machines has an attempt been made to solve the motor problems of the hour, the brake schemes being conventional, while the only feature suggesting the influence of the aircraft industry is the amplitude of the equipment on the dashboard. Aircraft were elaborated during the war until there were so many "gadgets" for the unfortunate pilot to watch that the truth is the majority never paid the slightest attention to any one of them. Yet here we find complication being added to complication at the period when the motor carriage industry, unlike the aircraft, is supposed to have settled down to something like a practical proposition. The medical man is certainly the last who wants to have his thoughts taken off his work by being required to keep an eye on a dozen different instruments on the dashboard as he drives about town or country visiting his patients. True, one of the three new-comers we are discussing offers some compensation in the guise of a steering wheel without a lever on it.

because the throttle and magneto controls have been placed among the squad of "gadgets" on the dashboard; but one cannot see that it is any easier to work the throttle or magneto from the dashboard than from its usual place on the steering wheel. Indeed, of the two the conventional practice is the handier.

The only thing these new-comers from the French aircraft industry have to offer in the way of a fresh note is in the amplitude of the valance they supply, more or less on the American style, in the region of the front dumbirons, and of the mudguard in general, all of which scarcely looks like making motor history. But their advent is welcome, first, because they have the habit of developing design rapidly; secondly, because, as competitors for the relatively small market that offers in high-powered costly cars, undoubtedly they will cause the old-established firms, who are revealing such disheartening lack of enterprise, to bestir themselves and engage some brilliant young men with ideas, in substitution for their present presumably exhausted staffs of designers.

A SPANISH CONTRIBUTION.

The publicity department of the Citroen enterprise, which was due to achieve so-called mass production early this season, has been manifest to such good purpose that one would imagine it had been attained already. The driving of a certain number of cars to the Salon as representing a day's alleged output may, however, be regarded as mere *réclame*. A great deal has to be done before the promise of 100 cars daily materializes. Moreover, the price is higher than was proposed originally. Nor is there anything remarkably original in the design of the vehicle, so that it calls for no further consideration on the present occasion, particularly as it is understood that no examples are available yet for export to this country.

A new car comes from Spain, the price of the Barcelona-built four cylinder engine 16-20 h.p. Elizalde machine being fixed provisionally at 22,050 pesetas. The fact that of the two examples staged one has an overhead valve and the other a side valve engine, the bore and stroke measurements being identical, suggests that the manufacturers have scarcely made up their minds as to precisely what they would be at. It is observable, however, that in this novelty the problem of brakes has received serious attention. Not only has the foot-controlled set been furnished to all four wheels; the front suspension has, besides, been specially adapted to take the brake reaction, the scheme being a combination of short semi-elliptic with short cantilever front springs. Established firms in the motor industry prominent in fitting brakes to all four wheels, however, such as Delage, Hispano-Suiza, Piccard-Putet, Gnome et Rhône, and Bellanger, do not deem it needful to court complication in this way. They merely build the front details of their cars very strongly. Moreover, all three use wire wheels, which are largely going out of fashion in the British industry by reason of the cleaning difficulty.

SOME OF THE SMALLER EXHIBITS.

As showing that some members of the Continental industry are giving attention to the matter of the small car, however, it may be mentioned that the following 4-cylinder vehicles were staged: 9 h.p. Alba (65 by 130 mm.); 6 h.p. Buchet (60 by 100 mm.); 8 h.p. Buchet (65 by 110 mm.); 6 h.p. Bugatti (65 by 100 mm.); 6 h.p. Charron (68 by 100 mm.); 8 h.p. Clement-Bayard (60 by 100 mm.); 6 h.p. Majola (59 by 90 mm.); 6 h.p. Mathis (58 by 100 mm.); 6 h.p. Philos (60 by 100 mm.); and 8 h.p. Zebre (55 by 105 mm.). For the most part medical men will be interested in vehicles of a slightly larger class, among which is a novelty in an 8-cylinder water-cooled nominal 8 to 10 h.p. Suere car with 45 mm. bore and 90 mm. piston travel dimensions; three forward speeds; Michelin disc wheels and Delco electrical gear for starting the engine, firing the mixture in the cylinders and lighting the vehicle, which has consequently no magneto. The construction of this V-type engine is ingenious. The cylinder blocks are cast integral with the vertically split crankcase, each half of which consequently carries a block of 4 cylinders, the Delco apparatus being accommodated in the V between them.

Perhaps the most popular vehicle in the nominal 10 h.p. class is the 4-cylinder monobloc Peugeot of 66 mm. bore

measurement and 105 mm. piston travel. In this machine, too, we find the idea of casting the crankcase and cylinder block in one piece; but, as this is a vertical engine, of course only the upper half of the crankcase is embraced in the combination. The chassis is standardized with electrical engine-starting and vehicle-lighting gear, and the now usual French method of unit construction for the engine clutch and gearbox is exploited, the control of the last-named detail being in the centre, not at the side, of the chassis. In the main the worm-drive is not as popular in France as in this country, but it is employed in this Peugeot model on the proper principle of accommodating the worm below the back axle. The rear suspension is by cantilever springs which are not mounted in the general way, the aim of the departure being to ensure the combination of rigidity where that is desirable with flexibility.

The four-cylinder 10 h.p. Majola is a model unusual among the small vehicles displayed, in that it has overhead valves, the inlet and exhaust series being set diagonally in the combustion chamberhead and worked by a single camshaft, which is driven by a silent chain from the crankshaft. It will be observed, therefore, that the method of driving the crankshaft does not accord with either successful racing-car practice or aircraft construction; not that there need be any reason to anticipate trouble on toy scale constructions of this type. The chain need not stretch, provided weight is not deemed a matter of importance, therefore a chain of ample strength is employed.

ODDS AND ENDS.

Like the Peugeot car, the Mathis above-mentioned, which is built in Alsace-Lorraine, has the gear control and hand-brake lever at the driver's left hand. Each valve cap serves to cover an inlet and an exhaust valve. Both sets of brakes act on the back wheels. In the larger Mathis model the hand-brake lever is on the driver's right. Broadly speaking, one sees in chassis of this sort, as in the Buchet and in other small cars, that, as a result of five or six years' development, a greater robustness of construction has been sought. Perhaps another way of putting it is to say that the necessary strength is provided by using more of the same grade of materials instead of newer, lighter, and higher grade materials. The Charronette light car now has the radiator in front of the engine instead of in the front of the dash. Such problems of the Voisin Sulky, reminiscent of the motor buckboard of ten years ago, with two-cylinder air-cooled engine, are merely illustrative of the wide variety of small vehicles of unconventional sorts tentatively on the market, but are not otherwise of concern to the medical man. In the new Clement-Bayard, as in the Peugeot light car, the cylinders and top half of the crankcase are cast in one. The Clement-Bayard engine has a separate head, and there are no valve caps, while a banjo type of rear axle and propeller shaft casing is employed in combination with a single transverse semi-elliptic rear spring. The engine, clutch, and gearbox are of the unit construction, and the change speed control is centralized. The 13 h.p. Unic car of 80 mm. bore measurement by 130 mm. piston travel is really an example of a modern middle-sized car, and is incidentally interesting in that double cantilever rear springs are employed.

Another note of the Salon is the introduction of some middle-size six-cylinder cars; as instance the 15 h.p. Lorraine-Dietrich with a camshaft inside the crankcase, the enclosed overhead valves being worked by rockers. This machine has the left-hand position for steering. The greatest novelty in steering gears is that furnished to the Bellanger de luxe chassis with eight-cylinder V-type engine, wherein the problem of providing a pronounced rake to the steering pillar is made difficult by the position of one block of cylinders.

Broadly speaking, the Renault and Peugeot small cars proved the most popular in the show. The medical man will find all the cars of interest displayed at Paris staged at Olympia, London, in a fortnight's time.

A BILL has been introduced into the Chamber of Deputies of the Republic of Uruguay providing for the organization of a Pan-American Congress to discuss measures for the combating of influenza. It is proposed to hold the congress at Montevideo in the coming winter.