working class if the gestations be complicated by any of the many morbid states to which they are liable. The single fact mentioned in the report here quoted—that of thirty-one mothers suffering from albuminuria one only developed eclampsia—speaks strongly for the value of the work done.

Prevention is the keynote of the whole prematernity movement. At present it is not known how many lives are lost antenatally, and therefore how many might be saved cannot be stated; but there can be no doubt that many are so lost, and there is justification for the belief that by antenatal clinics and prematernity practice not a few of them may be saved. Infant life will be not less but much more valuable after the war, and the politician no less than the hygienist will be well advised to consider closely all available means of saving the unborn.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE NEW TAXES.

THE prohibition of the further importation of passenger-car chassis and parts has brought to an end the revenue planned by Mr. McKenna in his autumn Budget to be reaped as an additional war-time contribution from motoring. The sum received by the Exchequer while those duties were in force and the trade was free to import foreign cars and cycles amounted to £540,609. At this rate, had those duties remained in force for a full year, they would have amounted to a very appreciable sum more than the £800,000 which the Chancellor of the Exchequer hopes to reap from the alternative revenue from motoring through the new scale of licence fees. In face of the lapse of the duties through the prohibition of imports it was to be expected that motoring would in any case be taxed in an alternative way to yield some special war-time revenue.

The two obvious alternatives were increased licence fees or heavier petrol duties. There are many phases of the petrol situation which may not be made public, but which are quite appreciated by the Government. I am convinced, however, that had the Chancellor raised the duty on petrol instead of introducing heavier car licences, his proposals would have come in for a great deal more criticism from the motoring community than they are receiving now.

THE ALTERNATIVES.

The medical man who has not studied the matter in all its bearings may protest in all reasonableness that his car is as much a utility vehicle and as little a pleasure carriage as is the munition maker's motor-lorry, and he may ask why the whole of the burden of the new taxation is not placed on the shoulders of those who motor for pleasure and of whom there has been so much talk of late. The answer is that the data collected by the various motoring organizations from every quarter of the kingdom reveals that only a negligible quantity of passenger cars out of the total in use in the country are being employed for pleasure as distinct from one business purpose or another. Were the share of the revenue to be raised apportioned to this residue of pleasure car owners, the individual contribution would be so heavy that, practically without exception, the owners would be compelled to put their cars by, and therefore no money would be forthcoming for the Exchequer from this source. The question was whether the burden of taxation could be divided between the owners of passenger cars or whether some of the burden should be placed on the shoulders of the users of "utility" motor vehicles.

THE EFFECT OF THE HIGHER LICENCES ON VARIOUS TYPES OF CAR.

As far as this new taxation is concerned, at least 90 per cent. of medical men fall under the head of one of three groups. Let us consider each in turn, beginning with the least taxed classes as being those that probably constitute the greatest numbers.

First in the scale we have the light car users, such as Standard car, Swift, Singer, Stellite, and owners of such like vehicles, who will have to pay 3 guineas more licence fees for the full motoring year beginning January, 1917, and £2 7s. 3d., being three-quarters of the increased fee for the right to use their cars after August 15th next, because the new duties have been made law after only one quarter of the current year has lapsed.

Next we come to the class using such machines as 12-h.p. Rovers, and, indeed, anything up to the size of what is in point of accommodation a really big vehicle of great speed possibilities, such as the 16-h.p. Sunbeam. By the new scale of taxes those driving four-cylinder vehicles which do not exceed 80 mm. or 3 $\frac{1}{2}$ in. cylinder bore will have to pay 3 guineas more for their motoring in 1916 if they want to employ their cars after August 15th next, and 4 guineas a year more for the full year beginning January, 1917.

In the case of those medical men who have cars that come within more than the third degree of taxation on the new scale, motoring would cost each 9 guineas more than he anticipated this year, and 12 guineas, or 5s. 3d. a week, more for the full year of 1917. This would be a material matter chiefly in the case of owners of Ford cars, some of whom, I gather, are suggesting that the whole system of Treasury rating should be altered, and the tax based, instead, on the original price of the car. While frankly admitting that some owners of such vehicles would feel the strain of an extra war levy of this sort, one has nevertheless to confess that it is to the interest of medical men as to all other sections of the community that no taxation system should be adopted that should prejudice the mechanical development of the motor. In what direction during recent years has the motor been evolved so that we are getting light, refined, and small power packets to do as much work and develop as good a turn of speed as large ones did formerly and with vastly more refinement? Briefly, by the development of a longer stroke in relation to bore. "Yes," the Ford owner may say, "I quite agree that, as regards British-made cars, or, for that matter, European ones, the present system of taxation is fair, but it is quite unfair to the American machine." That remark, however, is not quite accurate. If those American machines that constitute the newer models, and show that their makers have been making better motors of recent years, are studied it will be found that to get the efficiency, the refinement of working, the power from the engine volume, the flexibility, and so forth, there has been a gradual lengthening of stroke measurement in relation to bore.

Many of the 1916 American models come off quite well under this new Treasury rating. Take the car that is produced on the next largest scale to the Ford, the 12-h.p. 1916 Willys-Overland. Under the new scheme this machine is only taxed 4 guineas more for the whole year, because it is a new and modern design of engine. On the other hand, the Ford engine measurements have not varied since 1908. (See *Autocar*, November 7th, 1908.)

HOW THE MEDICAL MAN MAY BE RELIEVED.

In my opinion it would not be justifiable to alter the basis for arriving at amount of taxation unless it could be shown besides that by so doing the evolution of the motor would be encouraged. In the circumstances, far from encouraging development, it would be discouraged and a premium put on a type of motor which has contributed nothing to the world's knowledge of how to improve the liquid fuel internal combustion engine, while owners of other American manufactures, to say nothing of the British and European ones, the makers of which have been developing their motors from year to year, and the bore and stroke of whose machines do not remain in 1916 what they were seven and more years ago, would be penalized.

The medical man has to remember that, as an income-tax payer, his car charges are allowed to him as a business expense, and also that he has paid only half licence rates hitherto. If the duty had been put on petrol instead of on cars, even with the rebate allowed to medical men, those who would be paying respectively 3 and 4 guineas a year more for their motoring under the new licence scheme would not be as well off as they would be as matters now stand, while it is doubtful if those who will come within the 12 guineas extra tax will be much, if any, worse off. In any case it would not be good policy for the Treasury to upset the whole line of motor engineering development, which the New World itself is now copying from this country, merely to suit one particular class of machine; such a course would, moreover, have the effect of imposing additional burdens on the owners of dozens of other types of machines much used by the medical profession.

Therefore, in seeking a remedy for the case of the medical man, including owners of Ford cars or other machines of more than 16-h.p.—the British Medical Association has made representations on behalf of the profession to the Chancellor of the Exchequer this week—I suggest that his particular case could be served with least disturbance and most general satisfaction by making the extra duty only half what the ordinary member of the public will have to pay for any class according to Treasury rating. Thus, on a car of more than 16-h.p. the doctor would pay a war tax of only 6 guineas a year, or 2s. 7½d. a week, against the public paying 12 guineas, or 5s. 3d. a week. The policy, moreover, would be akin to the treatment of the profession in the matter of existing licences, also to the granting of a rebate on petrol duty to the medical profession. Thus no medical man would pay a total fee of more than 9 guineas a year for the use of any car suitable and necessary for doctors' work, and two-thirds of that tax is only a war-time levy. Suppose it obtains for two years, the Ford would still provide very cheap motoring for the profession.

MR. McKENNA'S CONCESSIONS.

As the foregoing goes to press, Mr. McKenna's reply in the House of Commons to Sir C. Kinloch-Cooke is announced, to the effect that the existing concession, under which registered medical practitioners pay only half rates on licences for motor cars and motor cycles, will be extended to the new duties. This, therefore, accords with the solution of the problem suggested above. In practice it means that the medical man will only have to pay a total of 3 guineas a year for the use of a light car; 4 guineas a year for the use of a machine not exceeding 16-h.p. Treasury rating; and of 9 guineas a year for a machine exceeding 16-h.p. Treasury rating; whereas the general member of the public will pay 6, 8, and 18 guineas in respect of those various classes of vehicles. The actual sums of money which doctors will have to disburse by way of extra duty this year are respectively £1 3s. 7½d. and one guinea and a half in mid-August for light cars and for machines not exceeding 16-h.p.; and in July £4 14s. 6d. for a machine of over 16-h.p. Treasury rating, for which the public will pay 9 guineas. Medical men using motor bicycles as well as side-cars are treated in the same way. Considering the crisis through which the nation is passing, and the urgent need of raising revenue, Mr. McKenna is treating the medical profession with fairness and understanding.

THE FUEL PROBLEM.

Far more serious for the medical man, as for the rest of the motoring community, is the petrol situation, if only for the reason that, whereas financial obligations in relation to licence fees are foreknown, in the matter of petrol prices none of us know where we stand from one week to another. The Government is striving to the utmost of its power to relieve the situation by imposing no more duties on motor fuel, which is rightly deemed to cost the community too dear already. It goes further, for the new scale of licence taxes very distinctly discourages the use of large-engined cars of the character that are greedy of motor fuel. When an owner has to pay £126 a year for the mere right to take his car out of the garage the Government is going about as near to prohibition of a particular class of motoring as any one can reasonably expect.

All the talk of the Government taking control of the petrol companies and compelling them to supply the public at fixed rates is utter absurdity, for the simple reason that if it fixed rates, still without incurring loss, it could not supply the public at cheaper rates than they are paying for their petrol now. Reduced to plain terms, petrol is worth just as much as it will fetch in the world's markets, and, as we are dependent on Transatlantic markets for the bulk of the supplies used by the public, we must pay what that fuel will command there plus the cost of bringing and distributing it here. Since last this matter was touched on in these columns there has been another 2d. a gallon advance in the price of Pratt's and the majority of other brands, consequent on the rise in the wholesale price of motor fuel on the part of the various refiners in the New World from whom the Anglo-American and other companies here have to buy their supplies. Briefly, the reason of the rise is that expansion of the consumption of motor fuel in the United States will

demand 25 per cent. more fuel than the total produced in the last year, of which total not more than 20 per cent. was exported, so that there is a threatened shortage of 5 per cent. for this year's requirements in America unless extra sources of supply are developed. Such resources are being developed, but gain under this head is offset by the facts that over one hundred American controlled oil wells in Mexico are at present idle owing to lack of transport facilities, that there is a blockage of shipping in the Panama Canal which is hampering the Rockefeller group in their dealings with the East, and that the production of the Cushing oilfield in the States has fallen off from 300,000 to 100,000 barrels a day of crude oil of the highest petrol content; besides which, for the time being, alternative fuels cannot be placed on the market of the New World by reason of the fact that the Steel Corporation and suchlike enterprises, which installed plant for producing benzole to compete with petrol when the price of the latter was only 20 cents an American gallon, are disposing of all their output of benzole now at between 80 and 90 cents an American gallon to the dye industries and to the makers of explosives.

DR. RITTMAN'S PROPHECY.

Dr. W. F. Rittman, inventor of the process which is claimed to yield anything up to 200 per cent. more petrol than the older methods of distilling petrol from the crude oil, and whose process the U.S.A. Government allows oil refiners within the borders of the States to use gratis, though only ten of them have adopted it so far, the Rockefeller group having a system of their own which apparently yields at least equally satisfactory results in practice, holds that either some way must be devised of increasing the available supply of petrol to meet the increased demand, or we must come to the use of fuels which have somewhat the same composition as the conventional motor spirit but which are more plentiful, or, finally, that we shall have to look to some other agent for use in the propulsion of motor cars and the operation of other hydrocarbon burning machines.

No two crude oils are the same. Of two wells in one oilfield one will yield more petrol than another. The average motor spirit content of petroleum in America is below 12 per cent. By new cracking processes Dr. Rittman holds that this can in time be brought up to 60 per cent. He says, however, that Californian and Mexican oils contain virtually no "gasoline," but can be made to do so by his fractional distillation process. He says that to-day 300,000 of the 2½ million motor vehicles that are owned in the States are being run on "cracked gasoline," otherwise motor spirit produced from kerosene, gas-oil, and so forth. He predicts that the rise in prices will continue uninterrupted until the middle of July next, will come down in mid-October to what it is to-day at wholesale in America, and will continue that rate of decline uninterruptedly until it comes back to normal.

That, however, does not solve the problem for this country, because it is largely a transport and distributing difficulty, which will obtain until the end of the war.

The patriotism of the Asiatic Petroleum Company, vendors of Shell spirit and other brands, in refusing to raise the price of their petrol to the public at a period when, commercially and morally, they would be thoroughly entitled to do so, cannot be overpraised. But as, owing to the enormously expanded employment of utility motor vehicles the demand for petrol among the civilian community in these islands is greater than it was before the war, and as owing to its contracts with the Government for the supply of the Services the Asiatic Petroleum Company can only let its clients have one-third of their normal requirements before all this expansion took place, it follows that that quantity of spirit is not much more than a bucketful towards a bathful that is needed. Therefore, by far the majority of motorists have no option but to buy the dearer brands, the first grades of which now cost 2s. 8d. a gallon in this country and 2s. 9d. a gallon in Scotland and Ireland. Indeed, during the next few months motor fuel costs are likely to prove a greater burden to the majority of the medical profession than the new scale of car licence fees.

The freeing of transport after the war, and the throwing open of oil wells in various parts of the world that are at present idle, or the production of which cannot be brought to market, will, of course, be the main solution.