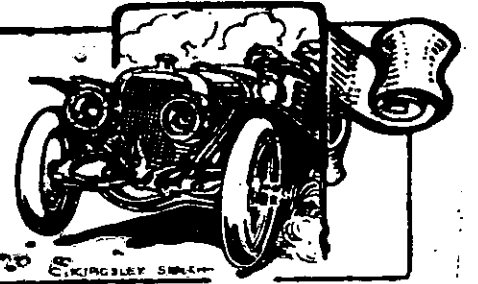


# MOTORING & CYCLING



The car of a few years hence may well prove to be minus a differential. For one thing, it is not a necessity, and, whatever virtues it may be supposed to possess, it is nowadays a very moot point whether its disadvantages do not over-balance its supposed virtues. It is well understood that the differential gear was not specially invented for the motor car. As a piece of mechanism it is at least a century old, and its application to the motor car appears to have been a development of its use in the axle of an ordinary tricycle about 30 years ago, and ever since then it has been regarded as something in the nature of a fetish to the learned and to the uninitiated a veritable "box of mystery." Its elimination in the car of the future would certainly make for cheapness as well as mechanical strength and simplicity, features which are becoming of increasing importance. In theory the one great object of the differential as applied to a car is to equalise the drive on the wheels when taking curves, the wheels having to rotate at different speeds by reason of the difference of the circle diameters they have to move in. As the wheels, however, are only about 4ft. apart, and the majority of turns made in ordinary work are of a large radius, the difference in the speeds is actually a small amount, and it may be said that 97 per cent. of the driving being for all practical purposes straight ahead, there is not much work for the differential to do, even assuming that it does that small amount well—and this is not generally admitted. Now, the penalty for discarding this complicated and expensive piece of mechanism is that the wheels must at times skid on the road and cause extra wear of the tyres. On the face of it, this would seem something to be avoided, but practical experience proves that there is actually a lot more tyre skidding and extra wear caused by the differential than is represented by the amount it prevents by the exercise of its prime function. For instance, most car owners are well aware that now and again when starting off the driving effort will all be thrown on to one wheel, and this will spin round on the road surface whilst the other remains fixed, with the result that the car does not move, and the rapidly-revolving wheel is wearing its tyre at an excessive rate; in fact, two or three minutes of this wheel spinning will take more out of the tyre in the shape of wear of the tread than several hundreds of miles of normal wear and tear will accomplish. In practice the condition that must necessarily exist for the differential to act properly, viz., equal adhesion of each driving wheel, rarely obtains, for the obvious reason that road surfaces are imperfect. The skidding that goes on solely because of this is a measurable quantity per mile run, and in a total of several thousands of miles it must add up to a large figure; in fact, in certain tests carried out with a plain solid axle, i.e., without the differential, a certain set of tyres actually showed a markedly longer life than a similar set did under equal conditions, but using the conventional differential axle. Given tyres of exactly equal size and pumped up to the same pressure, two conditions that would have to be carefully attended to, there is no particular reason why the differential need be retained—it would never be missed.

The number of motor vehicles registered in the United States on January 1, 1916, was 2,432,788, of which 71,026 were commercial vehicles. There is one car for every 42 people in the United States. The largest registration is in New York, namely, 212,844, and the next largest in Illinois, namely, 182,290. In Iowa there is one car for every 16 persons, and in Illinois one for every 33. Of all the States, Iowa has the largest number of motor vehicles in proportion to population. It is estimated that £100,000,000 is spent annually in the States on motoring, equivalent practically to £1 per head of population.

That Japan is rapidly building up a foreign trade in motor and cycle

tyres is evident from some returns lately to hand, which show that the shipments of such goods from that country during the eleven months ending with November last attained a value of no less than £313,500, as compared with only £91,800 in the corresponding period of 1914. With its cheap labour market Japan threatens to become a powerful competitor in the tyre world, and there is little doubt that the Australian rubber industry, which is now an important one, will sooner or later be seriously jeopardised if the Commonwealth authorities permit cheap-labour Japanese rubber goods to flood the Australian market.

Is the motor trade ready with a pledge to boycott German motor goods when, on the termination of the war, the international exchange of goods is permitted again? This question has been asked by one of the leading English motoring journals. It is certainly the fact that the British motor trade, like other trades, has made no attempt to bond its members but it would be wrong to predict as a sequel to this omission that the trade

press those of the enemy's industries that count for so much in war, and of these the motor is an essential one. The design of the Allies should be to apply whatever economic forces are available to force Germany to develop her inessential industries, of which the toy and fancy goods may be cited as examples. Were that principle applied Germany would be driven to cultivate her motor and other engineering interests by subsidy, and even then, deprived of the world's best markets, they would lack the spur of competition which in the end is the chief factor of success. At least she should not develop these key industries at other countries' expense. It is a subject on which a lead is badly required, and perhaps the Paris Conference will be productive of one. It may be relied upon that the motor trade is disposed to bar absolutely everything German, but to fortify the weak, to save them from temptation when business is normal again, something more durable and more reliable than independent action is needed.

There are many cyclists and motor cyclists who repair small splits or

in the home, for its uses are innumerable, and not a day passes without its value being perceived. It is, amongst its other uses, delightful in the hot bath as a cleansing and a refreshing addition.

THE FINEST FAMILY COUGH REMEDY, EASILY PREPARED AT HOME.

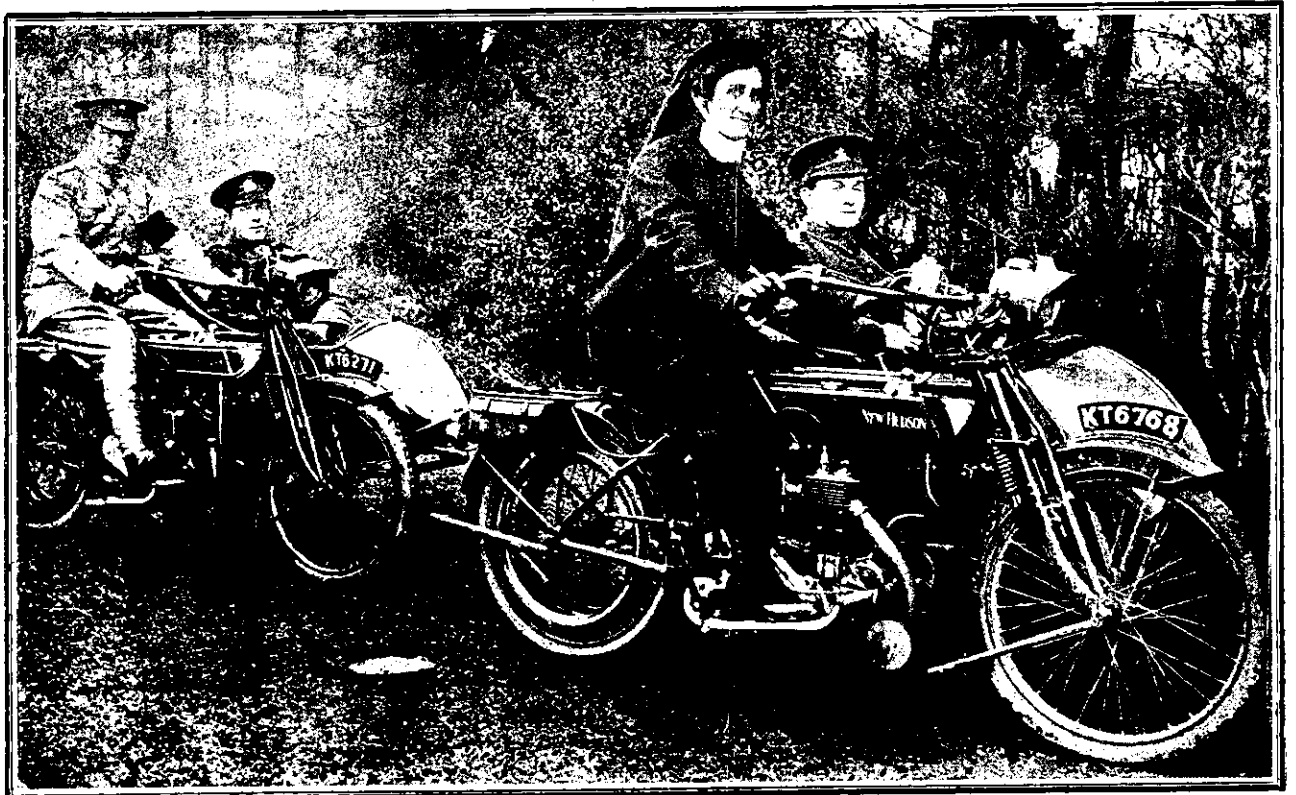
HEAN'S ESSENCE, WATER, AND SWEETENING ARE ALL YOU REQUIRE.

Making good cough mixture at home is now a simple process.

It is merely a matter of obtaining a bottle of Hean's Essence, and adding to it the necessary water and sweetening. The resulting cough mixture is the finest you can possibly obtain. The money-saving is tremendous.

Simple yet full directions are given on each bottle of Hean's Essence. Any woman or even child can make the mixture.

The finished preparation is so good, pure, harmless, effective and wonderfully cheap that there is no wonder Hean's Essence is popular every-



SIDE-CAR RUNS FOR WOUNDED BRITISH SOLDIERS IN ENGLAND—Nurse Bengie, a very popular massage nurse at Maidstone, takes a convalescent soldier for a run on her New Hudson.

will readily resume dealings in German cars and accessories on the restoration of peace. Assertive patriotism is not characteristic of the best British temperament. Because of this temperamental reserve there is no organised boycott, but it is impossible to speak with members of the trade, says the journal in question, without realising that there is a deep-seated if silent resolve to continue in the wider sphere of commerce the punishment that will be meted out to the enemy in the field of war. Without clamouring for bonds and agreements, individual traders have independently and unobtrusively determined to apply that principle to their future business operations. It is asked if this feeling does not provide the opportunity for organising a permanent and drastic boycott. We must not deceive ourselves into believing that Germany will be extinguished as an industrial nation. After the war the most industrious nation in Europe will work harder than ever and will offer the product of its labour to the world. Sane opinion among leading business men holds that it will be impossible to deny it the world's markets. As a consequence the wiser policy seems to be to sup-

tears in their tubes by the simple expedient of affixing a patch, as with an ordinary puncture. This will serve for a short time, but eventually there will again be trouble, owing to the split having spread until it reached the edge of the patch. The liability of a split to enlarge underneath a patch does not appear to be generally known, but it is the cause of many unexpected and inconvenient deflations. The only unfailing remedy, says the Dunlop Rubber Co., is to cut a small piece out of the tube so that an oval hole is left, or a split with a circular hole at each end. If this is done cleanly there is nothing that will spread, and a patch then applied will effect a permanent repair. No cyclist will object to removing a little of his tube, if it will prevent quite a lot of the tube removing itself later.

Cleanliness and health demand almost as careful preparation of the house for the long winter months as for the spring freshening, and good housewives take care to have a special turn-out of the home at this time of the year. For all cleansing purposes Scrubb's Ammonia is an invaluable help. Indeed, it ought always to be

where. The price is 2s. a bottle. It saves about nine or ten shillings for the home.

"Kindly send at once 12 dozen Hean's Essence. I have never had a seller to equal it. Your idea of putting up a cough mixture in this concentrated form, and thus saving so much money, is appreciated by my customers.—W. J. Hill, Auckland."

"Kindly forward another bottle of Hean's Essence. We have derived great benefit from the pint of cough mixture we made from the previous bottle.—Mrs. Serle, Taringamatu."

"Please send another bottle of your famous Hean's Essence. The mixture is splendid.—A. McDonald, Pongaroa."

Be sure you get Hean's Essence. That is the chief point for you to watch. Hean's Essence does not contain any poison such as paregoric, or laudanum, or morphia, or chlorodyne, or opium, etc. It is pure, harmless, effective, easing, soothing and wonderfully economical. Hean's Essence is now sold by most chemists and stores, or post free on receipt of price, 2s., from G. W. Hean, Chemist, Wanganui.

Be sure you get "Hean's," as no other will do.



BRITISH MADE.

## HOBSON PLUGS

Give easy starting, perfect sparking at all speeds, do not soot up and are practically everlasting.

H.M. Hobson, 29, Vauxhall Bge. Rd., London, Eng.



ROYAL MAIL MOTOR SERVICE BETWEEN HAWERA AND OPUNAKE.

Leaves Hawera 12.45 p.m., arrives Opunake 3.30 p.m. Leaves Opunake 6.30 p.m., arrives Hawera 9 a.m. in time to catch mail train. Special motors for football parties, etc. Motors for hire.

J. MOURIE ..... Proprietor.