can, however, won again, but only defeated Farley by half a wheel, with Rutt third. In the third heat three starts were made, as none of the riders would accept the pacer's wheel. Eventually Rutt took it, with Kramer second and Farley last. Half a lap from home Kramer went round Rutt and defeated the German by half a length, with Farley the same distance off third. Kramer won easily on points from Rutt, with the Australian last. The Continental papers, however, gave Farley great praise for his good showing and fast sprinting so soon after a long journey.

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Farley's second engagement was away from Paris, at Genoa, in Switzerland, where he had been engaged to race against Ellegaard, Rutt, Paird, and other Continental celebrities, and the race had not been ridden at the time of writing. The Australian champion states that the promoters who had engaged him were so satisfied with his showing against Kramer and Rutt, that they have given him a special match against the three best men in Europe, viz., Henri Mayer, Kramer, and Poulain, and the event was scheduled for early in July. Farley states that the food on the Continent is very oily, and takes a lot of getting used to. He is still riding his Australian-built machine, which meets with praise on all sides. The sport, he states, is well attended all over the Continent, and it is a common sight to see 25,000 spectators present at a big match race. Kramer, he states, is very anxious to visit Australia for a racing trip next season, and the American champion wishes to secure such an engagement.

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A Melbourne writer says: "The New Zealand cracks make no secret of the fact that they intend making a bold bid for the Australasian Road Blue Riband which J. Arnst won for New Zealand in 1903, and which was subsequently in 1904 won by T. Larcombe, of New South Wales, from R. Arnst by a very small margin. The New Zealand representative team for the forthcoming Warrnambool road race promises to be a very warm one."

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Owing to the Warrnambool-Melbourne contest being held some four or five weeks later this year, the riders on the outmarks will have the advantage of starting in daylight, which will enable the men on big marks to take full advantage of their handicaps.

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The success of the monster motor and cycle run to be held on "Dunlop Day" (September 2), is already assured. It is the intention of the promoters to distribute a numbered ticket to every cyclist and motorist taking part, and prizes to the value of £19 will be ballotted for at the smoke concert to be held in the Canterbury Hall the same evening. The first prize, value £8 8s, will be a handsome travelling bag and dressing case, presented by Messrs. S. Manning and Co., Limited; second prize, silver afternoon tea set, presented by Messrs. F. T. Pannell and Co.; third prize, ladies' dressing case, presented by Messrs. J. Ballantyne and Co.; fourth prize, case carvers, silver-mounted, presented by Messrs. J. Bates and Co.; fifth prize, presented by Messrs. Jones and Sons. Already word is to hand that a number of automobilists from Ashburton and the surrounding districts intend taking part.

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The committee of the Christchurch Cycling and Motor Club are making elaborate preparations in order to ensure the success of their smoke social, to be held in the Canterbury Hall on the evening of the Dunlop road race and monster run movement, in which a large number of leading representative men are taking an active interest, and it is believed the date mentioned will make an important epoch in the history of Canterbury. The whole of the cycling community are taking the matter up enthusiastically, and from present indications the function gives every promise of being a most pronounced success.

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The report of the Christchurch Cycling and Motor Club for the year ending July 31, 1905, showed that the membership has increased from 172 to 192. The result of the year's working was a net profit of £32 12s 1d. The assets of the club are £869 11s 10d in excess of the liabilities.

The Motorist.

(By "PETROL.")

Mr. Charles Glidden commences another big tour next month, Egypt being the first place visited.

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The Union Company has decided to make a reduction of 25 per cent. on the freight of cars on tour if accompanied by passengers.

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The big motor demonstration in Christchurch was deferred on Saturday on account of bad weather.

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The latest members to join the A.A.A. are Messrs. E. H. Bennett, A. C. Caughey, W. Cousins, and Cadman.

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The 24-hours motor car record on a track was broken recently. G. Vaughan, on a 40 h.p. car of American manufacture, made two attempts, and on the second occasion he was successful. The test started at 1.35 p.m. on June 24. A few hours after the start rain fell, rendering the track sloppy in places. During the night hours the track was lit up with Kitson lights and the path indicated by red lanterns. Vaughan did not try to establish a non-stop run, as he stopped for food, replenishments of petrol, water, etc., en route. In the first hour the "Decauville" covered 58 miles; the century taking 1hr 56min 39sec. Two hundred miles was negotiated in 4hr 3min 56sec, this time including a stop of 9¼min at the 149th mile. The times at the end of each hundred miles were as follow:—300 miles in 5hr 58min 52sec; 400 miles in 8hr 20min 9sec; 500 miles in 10hr 24min 42sec; 600 miles in 18hr 52min 44sec; 900 miles in 21hr 21min 37sec; 1000 miles in 23hr 33min 20sec. Continuing on, the motorist covered 1015 5-8 miles in the 24 hours. The aggregate time in stoppages during the drive was 1hr 44min 4sec, so that the actual driving time for the 1000 miles was 21hr 53min 16sec, which equals about 46 miles an hour for the whole run—a magnificent achievement, which still further demonstrates the wonderful strides made in automobile construction during the past few years. The fastest mile during the long run was the last one, which was done in 1min 3 2-5secs, or 56.78 miles an hour.

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The world's motor cycle championship was an unfortunate event for two competitors. Bac, the Frenchman, got his leg entangled with the chain of his machine, fell, and had to be taken to the hospital; and Olieslaegers fell when leading near the finish. Only two riders finished. They were Anzoni (Italy) and Pernette (France). The former was the winner of the championship and £40.

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At the Canning Town track (England), C. R. Collier beat the motor cycle record recently by nearly five miles. Riding the same twin-cylinder Matchless which he used in the last Isle of Man race, Collier covered 54 miles 523 yards in the hour. He started beating record at six miles (6min 46 2-5sec), as against the previous best of 6min 48 1-5sec, and he also lowered the five-mile flying start record en route, from 5min 31 1-5sec to 5min 28 1-5sec.

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Additional particulars of the Gordon-Bennett race show that one of the Italian representatives, Lancia, made the fastest time until put out of the race by the merest accident. A stone, caught up by one of the wheels, was hurled against the radiator, and put it out of action. The circuit of the course, which was 86 miles, was covered by Lancia in 1h 34min 57sec, as against Thery's 1h 41min 7sec. In the second round the Italian secured a lead of 13min, his time for the circuit being 1hr 42min 11sec, while Thery occupied 1hr 48min 37sec. It was in the third round that Lancia was forced to retire, which left Thery well in the lead. Thery's average pace per hour throughout was 48.51 miles. This is over 10 miles slower than that averaged by him in last year's contest—59 miles per hour. This was made on the Homburg course in Germany, and the comparison of the two speeds serves to show that the Auvergne course was not the best adapted for motor-racing. Even Jenatzy, in 1903, bettered this year's average, over the course mapped out in Ireland, the speed being 49 miles per hour throughout. The best average for the English cars this year was 40.43 miles per hour, by the Hon. C. S. Rolls. Some idea of the thoroughness of the arrangements made in carrying out the Gordon-Bennett race may be gauged by the work at the tyre-changing stations. When a car drew up after a circuit, a rapid inspection of the tyres was made, the vehicle having been lifted off the ground for the purpose. A worn tyre was cut away from the wheel in a twinkling, large, sharp knives being used to slash them to pieces, for they were far too hot to handle. As a matter of fact, the rubber became soft and pulpy from the frictional heat, and was literally burned away.

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One of the most puzzling things to intending motorists is the rating of petrol motors in horse-power. Here is shown a certain engine, rated at, say, 10 horse-power, and in the next showroom he sees a larger engine, but rated at the same power, while in yet another showroom he is assured that an engine of obviously smaller dimensions than the first is 11 horse-power. Then, again, he is confronted with combinations such as 7-9, 9-11, 12-14, 12-16 or 16-20 horse-power. Most times the explanations of the salesmen do not agree, and the would-be motorist is as much in the dark as ever. The horse-power of petrol motors depends on compression, resistance of valve passages, cooling facilities and workmanship put into the engine and mechanism. These factors greatly influence the output of power. Then the number of revolutions per minute affects the power produced by lowering or raising the piston speed. Thus as normal speed, say, 900 revolutions per minute for a multi-cylinder engine, a certain power will be developed, and at accelerated speed of 1200 revolutions, the greatest power of which engine is capable will be obtained. Hence the practice of stating two powers, say 12-14, meaning normal and full power of engine. The piston speed of a petrol motor is calculated by multiplying the number of revolutions per minute by the length of the stroke. In every revolution of the fly-wheel the piston travels twice the length of the stroke; thus at 1000 revolutions of an engine having a stroke of 4in a piston speed of 670ft per minute is attained. It has been proved by careful experiments that a piston speed of over 800ft per minute is not useful, for there is actually no gain in power for the increased fuel consumption and wear of engine parts. From this it is easy to calculate the highest number of effective revolutions for any given stroke of engine. Example: 1200 revolutions with a four-inch stroke. Next factor in importance is compression. The mean effective pressure in the cylinder is 75lb per square inch, but in some engines it rises as high as 85lb, and increased power is obtained from the same quantity of gas by this means. Thus, different engines of same bore and stroke develop different powers. The makers of low-compression engines have not, apparently, mastered the principles on which successful high-compression motors are built to run. The latter type are of much better design and construction. It will be recognised that so many factors enter into the question of actual power developed by any given engine that it is impossible to arrive at a correct estimate of the actual brake horse-power, short of a test by dynamometer applied to the road wheels of a car. The best method for the intending purchaser to adopt is to have the power of any given car demonstrated in practical fashion on the road. There the question of price enters into the decision, and the value given in power for money should be well considered. But there is a way of estimating the horse-power of petrol engines from the dimensions of bore and stroke, which is close enough to actual horse-power for practical purposes. It is based on the assumption that piston speed is approximately constant for various types, and is 800ft per minute; also that pressure is 75lb to square inch with average engines. There is no better or simpler formula than this:—Horse-power per cylinder is reckoned equivalent to the square of the diameter of bore in inches, divided by 3. Example: Two cylinders, 100 mm. bore (4in) equals 16 divided by 3 and multiplied by 2, equals 10 2-3 h.p. This rating has been adopted by many of the clubs in England and America. Thus the buyer is independent of catalogue rating or salesman's claim. Some engines will do much better than this because of their superior design and workmanship.