

## ... Correspondence ...

[Readers are directed to the rules set out in "Business Notices" on page 183.]

P.N., INVERCARGILL.—The claim made by the Westinghouse magnetic brake for an equal efficiency, whether the car be running at 2 miles or 20 miles an hour, is purely a relative one, as you will ascertain from the particulars which appeared in December issue of PROGRESS. This brake is intended to arrest the speed of the car in case of emergency, although it is commonly used where high speed and perfect control are required in street traffic. Recourse to the hand ratchet brake for actually stopping the car is necessary after the magnetic brake has done its work. Once the wheels stop, the magnetic brake is powerless, for the reason that the rotating action of the wheels causes the motors to be transformed into generators which electro-magnetise the shoe brakes, and automatically apply them. The motorman operates the magnetic brake by simply reversing the handle of the controller. There is no doubt improvements are possible with all existing forms of brakes. Mr. W. G. T. Goodman, of Messrs. Noyes Bros., Dunedin, would perhaps be pleased to give you further particulars of the Westinghouse magnetic brake.

B.H.B., MANGOREI.—The matter you complain of was evidently an oversight which can be rectified at some future date.

W.N.A., WELLINGTON.—The price asked is £1,200. Write the owner whose address is given in his advertisement.

MOTOR BOAT AUCKLAND.—The design of boat will depend on the work it has to do, and whether sea or river going. With a length of 33 ft only, the beam would need to be considerable to carry 15 tons, and leave good room for the engine etc. To drive a boat of this size 12 miles per hour a four-cylindered engine, 4 in. by 5 in., would be powerful enough. This can either be made to use petrol or paraffin and with high tension ordinary or magneto ignition. The h.p. would be about 20. You had best get the boat built to suit your work and you can then easily adapt the motor to suit.

H.P., CHRISTCHURCH.—A kilowatt is 1,000 watts, or  $1\frac{1}{2}$  h.p. Electric h.p. is 746 watts.

'PHONE.—A tube core for induction coil will not be quite so sensitive to rapid and delicate variations in the current as one built up of iron wires and the presence of the brass rod through its centre will, by diminishing the mass of iron by about a  $\frac{1}{4}$  also lower its efficiency to some extent.

TEMPUS.—The simplest way to get exact time is to observe the crossing of the meridian by the sun's centre, and apply corrections for longitude and equation of time, the latter from an almanac. A transit instrument fixed accurately in the meridian is necessary. Exact time at any part of the day may be got from the sun's altitude by means of a sextant and artificial horizon.

MAGNET.—If you can beg, borrow, or steal, or in the public library get a chance of reading one or all of the following books, you will learn as much as is known on the subject—viz., Deschanel's "Electricity and Magnetism," Ganot's "Physics," by Atkinson, Silvanus Thompson's "Elementary Electricity and Magnetism."

## "Maizo" and "Maizena" Trade Marks.

Messrs. Robert Harper & Co., Prop. Ltd., of Melbourne some time since applied to register in Victoria in respect of an article of food made from maize or Indian corn a trade mark consisting of a label of distinctive design upon which the word "Maizo" appeared. The application was opposed by the National Starch Company, of New York, the registered proprietors in Victoria in respect of the same goods, of two trade marks, one No. 2247, consisting of the word "Maizena" and the other No. 2248, consisting of the word "Maizena" in combination with a cornfield scene, upon the grounds that the label bearing the word "Maizo" had such a resemblance to its two registered trade marks as to be calculated to deceive, and that the word "Maizo" both in appearance and sound had such a resemblance to the word "Maizena" as to be calculated to deceive. The Commissioner of Trade-Marks upheld the objections

of the National Starch Company and refused registration. Mr. Isaacs, K.C., and Mr. Cussen, instructed by Mr. Walter S. Bayston, Patent and Trade Marks Attorney, appeared for the applicants, and Mr. Irvine, instructed by Messrs. Edward Waters & Sons, Patent and Trade Marks Attorneys, for the objectors. Subsequently Messrs. Robert Harper & Co. Prop. Ltd. appealed to the Full Court of Victoria, against the decision of the Commissioner, and also applied to rectify the register of trade marks by expunging therefrom the two trade marks of the National Starch Co. upon the ground that the word "Maizena" at the time of registration of the said two trade marks, 2247 and 2248, was an ordinary English word in common use, denoted some substance manufactured from maize, and was merely a descriptive word. The result of the appeal and the action was that the Court reversed the decision of the Commissioner, and ordered the registration of Messrs. Harper's mark and also the removal from the Register of the National Starch Co.'s two trade marks. Mr. Isaacs, K.C., and Mr. Cussen, instructed by Messrs. Braham & Pirani, appeared for Robert Harper & Co. and Mr. Irvine and Mr. Starke, instructed by Messrs. Waters & Crespin, for the National Starch Company.

## New Theory of Nerves — Problems of Brain Action.

A popular science journal remarks that the study of nerves, their connections and activities, has been begun in earnest only within the past few years, but what has been learned seems to lead to as many surprises as has any other branch of science. Only here and there is there now an investigator in this branch, but these have already found out that all nervous action is spent upon the muscles. That all are in one way or another connected with them, that each particular nerve cell has a specific function, and substitution seems no more possible among them than that the eye be substituted for hearing or for tasting. At present, work is being carried on to determine the functions of various parts of the brain, especially for the effects of use and disuse.

What is the nature of exhaustion? What is the rate of recuperation, the source of energy and of automatic activity, what happens in sleep, in the hypnotic state, in disease, insanity, and in unconsciousness? All this will be enquired into. Dr. Hall has said that the nerves are the most wonderful things in the world, and we know so little about them—mind and thinking, conditioned by their presence and activity, on the one hand, and all expressions of them through muscular action as exhibited by motions and emotions. There are many reasons for expecting most important disclosures from this direction, which may make needful many changes in common beliefs in educational theories and efforts, of responsibility in crime and the proper management of defectives of all sorts. It is not unlikely, as great changes took place during the last century in the beliefs on many important subjects that will be required for the work of the twentieth century.

M. Camille Flammarion, the eminent French astronomer, declares that the inhabitants of the planet Mars are much more highly developed than ourselves. "Naturally," he says, "it is impossible for us to imagine what forms living beings must take there; but it is equally impossible for us to assert that the forces of Nature, which are there the same as here, and act under almost similar conditions (atmosphere, climate, seasons, aqueous vapour, and so on), have been rendered sterile by a perpetual miracle of annihilation, whereas on the earth the cup of life overflows everywhere, and the generating force of beings immensely surpasses their real and durable vitality. There are many advantages in favour of the Martians. First of all, it would be difficult for a human species to be less intelligent than ours, seeing that we do not know how to control ourselves. The second reason is that progress is an absolute law which nothing can resist. The hypothesis that Mars is inhabited by an intellectual race much superior to our own is growing stronger every year in proportion as astronomical observations become more and more precise. The geography of our neighbour is better known than was that of the earth 300 years ago. The same can be said of its meteorology and its climatology. No one can tell for certain what the weather will be like on earth to-morrow. Well, we know almost with certainty what the weather will be in such or such a country of Mars next week or next month. Its atmosphere being constantly pure and transparent, all the geographical configurations of the planet pass with precision into the field of vision of the telescope.

## Conquest of the Air.

### AEROPLANE THAT TRAVELS FORTY MILES AN HOUR.

Considerable excitement prevails in aero-nautical circles owing to the reports now afloat concerning the latest experiments of the Brothers Wright, two young American aeronauts who for years have been famous owing to the remarkable improvements they have effected in aeroplanes or flying machines.

For eight weeks past the brothers have been carrying out remarkable flights at Dayton, Ohio, and numerous witnesses have come forward to describe the evolutions of their new aeroplane. Flights of twenty and thirty miles are recorded, the speeds are said to have been as high as forty miles an hour.

The motor mounted upon it is a petrol engine of 24-h.p. The operator lies face downwards, his chest resting on a cushion, and with his hands he directs the steering and controls the speed of the engine. Very ingenious is the method of starting the vessel. The aeroplane is mounted on a little carriage running on rails, and the whole apparatus is started at the top of a long, narrow, inclined plane. Running down this, the aeroplane soon begins to lift, and, the engine being put in motion at the right moment the machine glides into the air and takes its flight with great smoothness. The engine drives two propellers working at high-speed.

Bessemer's autobiography has just reached these shores. One of the worst stabs England ever got was the invention of Bessemer steel. The United States now make more steel than all the rest of the world put together, and Bessemer was the foundation of the German Krupps in their big development. Bessemer had 114 patents for all sorts of things even for sugar manufacture. At 17 years old he invented perforated stamps for deeds and such papers. One official said these saved the Government £100,000 a year, through prevention of fraud. Bessemer was promised a post office billet, but never got that nor any pecuniary reward whatever. He invented a projectile, but Britain wouldn't look at it. Napoleon III. took him up. The necessity for stronger guns led to his inventing Bessemer steel. Its discovery is held to rank in importance with those of America, the compass, printing, steam, and electricity. Up to Bessemer's time steel could not be made with more than 50 lb in a crucible, but Bessemer made five tons at once at one-eighth the cost. Yet the British authorities were obstinate, resting on an assurance by Armstrong that steel could never be made into cannon. It is estimated that British gunnery was thus put back 20 years. —*Bullein.*

### DELICATE INSTRUMENTS REPAIRED BY PRACTISED MECHANICIAN.

HITHERTO scientific instruments of delicate construction have had to be sent out of the colony for repair. Now, however, it is possible for students and professional men in the mathematical sciences to have their instruments repaired by an expert in Wellington. Mr. H. H. Coote, of 65, Willis street, Wellington, has had, in addition to fourteen years' practise in optical work and the care of optical instruments, a great experience in the repair of fine instruments of all descriptions. Mr. Coote is a mechanician-specialist of such long standing that it will repay those who contemplate repairs or alterations to any of their instruments to consult him, rather than to send out of the colony, or commission a local repairer who may prove inexperienced —[Advt.]

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