

The phases of the Moon in New Zealand mean time:—

First Quarter	..	1 days	10 hrs.	38 min.	p.m.
Full Moon	..	8 days	3 hrs.	41 min.	p.m.
Last Quarter	..	15 days	11 hrs.	16 min.	a.m.
New Moon	..	22 days	3 hrs.	39 min.	p.m.
First Quarter	..	30 days	6 hrs.	11 min.	p.m.
Perigee	..	12 days	6 hrs.	6 min.	p.m.
Apogee	..	28 days	10 hrs.	6 min.	a.m.

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Mercury is a morning star during the month, coming into superior conjunction on the 24th, after which she will set after the Sun. He will be in conjunction with the Moon on the afternoon of the 22nd, and in his descending node on the 30th.

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Venus is now a morning star in the constellation Leo, drawing away to the west of the Sun. She will appear stationary amongst the stars on the 5th; in conjunction with the Moon on the 19th; at greatest brilliancy on the morning of the 23rd, when she will present a fine spectacle in the early morning sky.

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Mars is an evening star, rising later in Taurus. He is now drawing away from the Sun, and will soon be visible in our early evening skies. He will be in conjunction with the Moon on the night of the 12th, and will appear stationary amongst the stars on the 18th.

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Jupiter is still an evening star and visible for a while after sunset, underneath Alpha Librae. He will be in conjunction with the Moon on the 24th, and may be seen in the western sky rather lower than our satellite on this and the preceding evening.

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Saturn, rising shortly before midnight, in the constellation Aries, is now a fine object for the telescopist in the early morning hours. His ring system is well inclined to the line of vision, and presents a most attractive appearance at this time in a telescope of fair dimensions. He will be found near the Moon on the morning of the 11th, being on the same meridian at 5hrs. 58min.

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Uranus is an evening star in Sagittarius, at this time, and has a forward motion amongst the stars and making very nearly a perfect equilateral triangle with the stars  $\epsilon$  and  $\eta^2$  in that constellation. He will be in conjunction with the Moon on the 2nd, stationary on the 5th, after which his motion will be forward, and is in quadrature on the 20th.

Neptune is in Gemini moving to the east amongst the stars. He will be in conjunction with the Moon on the 15th and stationary amongst the stars on the 28th.

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The Constellations for the middle of the month, at about 8 p.m., are placed as follows:—In the north the "Great Square" of Pegasus is the object which first catches the eye, the lower right hand corner being made up of the bright star Alpha in Andromeda. Aquarius and Capricornus are over the "Square" and Piscis Australis, with the bright Fomalhaut, near the zenith. In the east Cetus, the Sea Monster, is now seen well above

the horizon, with Aries just emerging to the north-east and Pisces over it. In the south-east we may see the long trailing shape of Eridanus, the River, with the fine star Achernar in the end of it, nearest the Pole. West of the northern meridian is Cygnus, and over this Aquila, the Eagle, and the bright stars Altair, and those of the Dolphin, Ophiuchus and Serpens are now partly below the horizon, to be followed by the Scorpion and Sagittarius. In the south is Argo, the Ship, rising from its lower passage beneath the Pole, the fine star Canopus coming once more into prominence in the clear sky. The Cross and the bright "Pointers," Alpha and Beta Centauri, are moving down to their lower passage in the south-west, followed by the Centaur, Lupus and the Triangle.

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The Zodiacal Light has been seen to great advantage on several evenings during the past month, the delicate cone of soft pearly light being a most beautiful sight when seen away from the glare of street lamps and other artificial lights.

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New Comet.—A new comet, found on a photographic plate, at the Lick Observatory, became visible to the naked eye in the northern hemisphere during July, and was seen in powerful telescopes, in the south, during August, but has very rapidly receded from us and was at no time visible to the naked eye in these latitudes.

September 30, 1911.



### Necessity the Mother of Invention

He was an inventor from the Middle West with an improvement in farm equipment; but he also evidenced his abilities in other directions. His left leg was paralysed, requiring him to walk with crutches. He had removed the chain and right pedal from an ordinary bicycle, leaving the left pedal as a rest for the foot of his bad leg, and he propelled the machine by his right leg, pushing the foot against the ground. Thus he was able to go from place to place with facility.

### Fastening a Hammer Head to the Handle

The following method of securing hammer heads to handles may prove useful; It consists in taking an ordinary washer, cutting it away at opposite sides, and then bevelling it to form a wedge. When this is driven into the end of the hammer handle it is held firmly in place by the fibres of the wood that are forced into the original washer hole in the centre of the wedge. This idea is not offered as something new, but the average handy man has probably not heard of it, and may find it a very serviceable kink.

### The Aquaplane

Among the new things advertised is the Aquaplane, with which the makers say it is possible to have a real joy ride. Riding the Aquaplane at a speed of 20 miles or more offers the wildest speed maniac immemorable hair-raising and thrilling sensations. An Aquaplane is a small flat platform towed behind a motor boat. To use the Aquaplane one lies flat upon it, face downward, feet just extending over the rear edge until the boat is under way, then gradually brings the body to a kneeling position, after which, gradually stand erect—if you can. The makers recommend the first trial being attempted at slower speed, and much fun can be had in finding the proper spot upon which to stand at a given speed. The Aquaplane is made of the best cypress lumber, and is sold at a price which places it within the means of any motorboat owner. Imagine the possibilities of entertaining your nervous friends with the Aquaplane.

### Removing a Broken Handle from an Axe Head

When an axe handle or a chair rung is broken much time is apt to be wasted, and serious damage is sometimes done, through misguided efforts to remove the end from the eye or hole; yet it is a simple matter if one goes at it rightly. There is not the slightest occasion for heating in the one case nor for marring in the other. Bore a hole through the plug with a bit or drill small enough to insure against striking the sides of the original hole; then, with a narrow chisel, cut a slot from each of opposite sides of this hole to the outside of the material to be removed. This will leave the plug in two separate parts, which, if they do not drop out of themselves, may be easily knocked out or split out with the chisel.

If the problem should happen to be that of a handle which is secured by an iron wedge, then a small hole drilled through, close to each side of the wedge will make an opening through which it may be punched out, and from which to chisel the slots. In cases where metal is apt to be encountered it is best to use a twist drill for the boring, as such a drill works very well in wood and is not injured by moderate contact with metal, where a bit would be apt to be ruined.

### Screws that Stick.

They are a difficulty and trouble. The man at the end of the screwdriver twists till he perspires, and goes on twisting and perspiring until he gets the head of the screw off. Then it strikes him that his object was not the decapitation of the screw, but its extraction from the wood. There is a good way of persuading these screws to come out without decapitation, which is, as you will have observed, not effective. Take a red hot poker and put the hot end on the screw head and leave it there awhile. Take away and let the screw cool off. Then take your screwdriver and twist as before. This time your screw will come out quite easy. How is this? Simply because the heat expands the screw, and the screw enlarges the hole in the process, and when cold shrinks, whereas the wood does not. This method is infallible.