

the registration of non-technical trade marks, under certain conditions. As is well known, it is not now possible to register trade marks which are descriptive in character, or which make use of geographical names. Under the new law, however, if such a trade mark has become identified with a certain class of goods for a period of ten years, such mark may be registered in the Patent Office. This is an entirely new departure from the old practice, and is a very important step in advance, and will be found instrumental in legalizing the ownership in a certain class of vested trade rights. It will also be welcome news that the government fee for the registration of trade marks has been reduced from \$25 to \$10.

One peculiarity of the new law consists in the fact that the Commissioner of Patents is required to publish in the Official Gazette all trade marks for which registration has been applied. Opposition may be filed against the registration of the trade marks during a period of thirty days following the publication of the notice in the Official Gazette. The act thus provides for protecting the rightful owners of trade marks from wrongful registration. Those who wish to obtain the benefits of the new law may re-register their trade marks by paying the office fees and filing new applications.

The new law provides wise regulations in regard to the carrying of appeals first to the Commissioner of Patents, and later to the Court of Appeals of the District of Columbia. It also regulates the conduct of interference proceedings within the Patent Office, and also provides for the carrying of appeals from the Examiner of Interferences to the tribunals mentioned above.

Foreigners have the same privileges under the new law as Americans, provided their governments accord similar protection to the citizens of the United States. A certificate for a trade mark applied for in a foreign country will not be issued, however, by the United States Patent Office until the trade mark has been actually registered in the country of origin.

It is believed that manufacturers and other owners of trade marks will make haste to avail themselves of the wise provisions offered by the new law.

THE HEAVENS IN MARCH.

BY HENRY NORRIS RUSSELL, PH.D.

A time like the present, when none of the bright planets is visible in the evening sky, is a good one to begin a study of the constellations.

If we go out at about nine o'clock on a clear evening in the middle of March and look about us, we will notice some bright stars in the southwest. One of these far exceeds all the others in brilliancy, and most of us will recognize this as Sirius, the brightest of the fixed stars. It is fully four times as bright as any other star that is visible in our latitude. A couple of familiar stars on each side of it and an irregular cross of brighter stars below, complete the constellation of Canis Major—an easy group to remember, though it takes a good deal of imagination to see in it any likeness to a dog.

To the right of Canis Major is Orion, marked by the "belt," a line of three equidistant stars inclosed by a large quadrilateral. Betelgeuse, the red star at the upper corner, is an irregular variable, being twice as bright at some times as at others, while the white stars which form the rest of the constellation do not alter in brightness.

Still farther to the right we come to Taurus, whose brightest star, Aldebaran, forms a regular diamond-shaped figure with Sirius and the two brightest stars in Orion. It lies at one extremity of a V-shaped group of stars known since Greek days by the name of the Hyades. The star between Aldebaran and the point of the V is a fine naked-eye double.

To the right of the Hyades lies the closer cluster of the Pleiades, whose six brightest stars are visible to an ordinary eye, while some twenty more can be seen with a field glass.

A mere glance at such a star cluster raises the question, Are these stars really near together (compared with their distance from us) or do they only happen to seem so because they are nearly in the same line, though at very different distances?

In the case of the Pleiades and the Hyades, we can say with certainty that the first alternative is the true one. In each of these clusters the stars are slowly moving, all in the same direction and at the same rate, so that their distances from one another do not appear to alter. They keep together like a flock of wild geese, and we have just as much reason to suppose they are really companions as we have in the case of the birds—in fact, more reason, for stars cannot change the direction of their flight at will.

This conclusion is still further supported by the fact that the stars of a group have a strong family resemblance in color and spectrum, which points to a common origin.

Neighboring stars of different color and spectrum generally show by their motions that they do not belong

to the group. For example, Aldebaran does not share the drift of the Hyades, but is going in quite a different direction. The same is true in Orion, where all the bright stars except Betelgeuse have a common motion and similar spectra. In this case the motion is very slow, so that it is probable that these stars are exceedingly remote.

Still other groups of this sort are known, notable examples being five stars in the Great Dipper and a large group in the southern hemisphere including the brightest star in the Southern Cross.

But we must return to our survey of the heavens. A series of conspicuous constellations follows the Milky Way—Cassiopeia in the northwest, then Perseus, next Auriga, followed by Gemini with its twin stars, and then Canis Minor with the bright Procyon. Low on the horizon is part of the great constellation Argo.

The Dipper in Ursa Major and the Sickle in Leo are the most familiar figures in the eastern sky. Below the latter is the long line of Hydra. The bright stars Spica and Arcturus have lately risen, but the constellations to which they belong will be better seen in the following months.

THE PLANETS.

Mercury is morning star until the 9th, when he passes behind the sun and becomes evening star. He is invisible except at the end of the month, when he sets more than an hour later than the sun.

Venus is evening star in Aries, and is very conspicuous, as she does not set until about 9 P. M. She is at her brightest on the 21st, surpassing even Jupiter by more than a magnitude. The smallest telescope or even a good field glass will show her as a crescent like the moon two or three days before first quarter.

Mars is in Libra and rises at about 11 P. M. in the middle of the month. He is growing brighter as he comes nearer to the earth, but is not nearly as conspicuous as he will be in May.

Jupiter is evening star in Aries, close to Venus. The two planets are nearest on the 8th, when Venus passes north of Jupiter at a distance of about five degrees.

The moon is near by at the time, and passes close to the two planets the following evening, so that this is a very brilliant conjunction.

Saturn is morning star in Aquarius, and rises about 5 A. M. in the middle of the month.

Uranus is morning star in Sagittarius, rising at about 2 A. M. On the 25th he is in quadrature with the sun, and comes to the meridian at 6 A. M.

Neptune is in Gemini. He is also in quadrature on the 26th, but is east of the sun and so comes to the meridian at 6 P. M.

THE MOON.

New moon occurs at 1 A. M. on the 6th, first quarter at 4 A. M. on the 14th, full moon at midnight on the 20th, and last quarter at 5 P. M. on the 27th. The moon is nearest the earth on the 21st, and farthest away on the 8th. She is in conjunction with Saturn on the 4th, Mercury on the 5th, Jupiter and Venus on the 9th, Mars on the 24th, and Uranus on the 25th.

There is an annular eclipse of the sun on March 5. It is invisible in the United States. The track of central eclipse lies chiefly in the southern Indian Ocean, crossing no land except part of Australia.

Sidmouth, England, February 8, 1905.

GRANDFATHER'S BAROMETER.

BY B. L. PUTNAM.

Not a dainty affair with silver or satin trimmings, nor yet with the credentials of Uncle Sam attached; but a constant companion, shifting from woods and fields to skies—this was the weather bureau of our grandfathers; and mingled with the signs and omens of old there was just enough of fact that the old-timer sometimes gets the best of it now in foretelling the weather.

"Rainbow at night, sailors' delight;

Rainbow in the morning, sailors take warning;

Rainbow at noon, rain very soon."

Just adapt this couplet the next time a rainbow comes your way, and see for yourself.

A combination of rain and sunshine was also supposed to bring rain the next day.

Another verse which found favor was—

"Evening red and morning gray

Will set the traveler on his way:

Evening gray and morning red

Will pour down rain upon his head."

This is but an adaptation of the adage that a red sunset is a sign of clear weather. And if the sun goes down in a cloud rain will surely come the next day. If smoke from the chimney settles instead of excepting in dry weather, when, the prophet assures us, "all signs fail."

If it clears off in the night, look for rain the next day. If smoke from the chimney settles instead of rising, there is a storm at hand. When sound travels a long distance there is also a storm near. Never expect much storm in the old of the moon. The absence of dew and an unusually heavy dew are alike forerunners of rain.

Not much frost need be expected in the light of the moon. An owl hooting in the hollow is a sign of a cold storm; on the hill, it foretells a thaw.

If the hornets build low the winter will be hard. When leaves fall early the winter will be long. When snow falls on a hard road it will not last long. The last spring snow storm never comes until after the "sugar snow," which may be recognized by coming in unusually large flakes and only lasting a few minutes. If the hog's melt is found big at the front the first part of winter will be the most severe; if the reverse is true, we may look for hard weather in February and March. Bright "northern lights" bring severe cold. If the sun shines on the second day of February so as to permit the woodchuck to see its shadow, it will go back into its hole and remain six weeks. If March comes in like a lamb it will go out like a lion; if it comes in like a lion it will go out like a lamb. In other words, one extreme at the beginning promises the reverse at the end of the month. Sun-dogs indicate a bad storm.

Distant sounds heard distinctly forebode no good weather. If the sun "draws up water" it will rain. The pitcher sweating and the tea-kettle boiling dry also indicate rain. Cobwebs thickly spread upon the grass are an indication of fair weather.

Animal life seems, according to the popular notion, to have peculiar warnings regarding the weather changes. Some of these are explainable by natural causes. It is a fact recognized by all intelligent stockmen that cattle have an intimation of an approaching storm some hours before it is visible to the human eye. There is a certain restlessness which the cowboy has learned to interpret at once. When you see a pig pasturing in the field build for itself a nest you may look for a storm. Chickens take extra pains in oiling their feathers just before a rain. Pea fowls send forth their shrill cries as a warning, and when the quail cries "more wet" from the meadow, the farmer works briskly to get his hay under shelter. If the chickweed and scarlet pimpernel expand their tiny petals, rain need not be expected for a few hours. Bees work with redoubled energy just before a rain. If the flies are unusually persistent either in the house or around stock there is rain in the air. The cricket sings at the approach of cold weather. Squirrels store a large supply of nuts, the husks of corn are unusually thick, and the buds of deciduous trees have a firmer protecting coat if a severe winter is at hand. If the poplar or quaking asp leaves turn up the under side rain will soon follow.

If the fog rises in the morning, it is a sign of rain; if it settles, a clear day may be expected. Watch the smallest cloud you can see. If it increases in size it is going to rain; if it melts away and vanishes completely, fair weather will follow.

If the camphor bottle becomes roily it is going to storm. When it clears, settled weather may be expected. This idea has seemingly been utilized in the manufacture of some of our cheap barometers. The main trouble is, they seldom foretell the change until about the time it arrives.

Last, but not least, the rheumatic can always tell it "in their bones" when a storm is approaching, and to this prognostication the octogenarian of to-day is as firm an advocate as were his forefathers.

SCIENCE NOTES.

MM. Chanoz and Perrigot have been attempting to repeat an experiment made by M. Bordier, who showed that N-rays emitted by tempered steel could apparently be detected by photography. The former, however, found that equal sized pieces of steel and of lead, placed on exactly similar screens, and exposed for various periods, never gave different halos, as described by M. Bordier.

In June, 1903, the English Astronomer Royal published the statement that there was a discrepancy in the determination of the longitude between the Greenwich and Paris observatories. It was also stated that independent, though simultaneous, observations to rectify this error were to be undertaken by two observers in France. This work has now been completed, and at a recent meeting of the Paris Academy of Sciences, M. Loewy, director of the National Observatory, exhibited the results of the French observers. This is in remarkable accord with the results of the English observers. The difference only amounts to three hundredths of a second, being in actual figures 9 minutes 20.974 seconds. From this it is deduced that Paris stands on a meridian which is east of the meridian of Greenwich, and that its noon is this amount in advance of that of Greenwich. The results of these observations, and their close agreement with the previous work carried out for this purpose in 1888 and 1892, testify to the commendable exactitude of the operations of both the English and French astronomers. According to M. Loewy, the results of this last investigation establish precisely and definitely the difference of longitude between the two fundamental meridians of the respective observatories.