

Correspondence.

A New Star in Sagittarius.

To the Editor of the SCIENTIFIC AMERICAN :

From an examination of the Draper Memorial photographs, Mrs. Fleming has discovered a new star in the constellation Sagittarius. Its position for 1900 is R. A. = 18h. 56m. 2s., Dec. = -13° 18'. It was too faint to be photographed on eighty plates taken between October 18, 1888, and October 27, 1897, although stars as faint as the fifteenth magnitude appear on some of them. It appears on eight photographs taken while it was bright. On March 8, 1898, it was of the fifth magnitude and on April 29, 1898, of the eighth magnitude. A plate taken this morning, March 9, 1899, shows that the star is still visible and is of the tenth magnitude. Two photographs show that its spectrum resembles those of other new stars. Fourteen bright lines are shown, six of them due to hydrogen. The entire number of new stars discovered since 1885 is six, of which five have been found by Mrs. Fleming.

E. C. PICKERING.

Harvard College Observatory, Cambridge, Mass., March 9, 1899.

Removing Window Frost.

To the Editor of the SCIENTIFIC AMERICAN :

During the very cold spells of the past winter I made a number of experiments in removing ice or congelation of water from window panes, using fourteen methods. I found them efficacious in every instance, but some far superior to others. That which worked best is No. 1, that second best No. 2, and so on. I noted that in stores where there are so-called "box-windows," the congealing was most apparent; and that in some stores, where there was a comparatively dry heat, the windows were not materially affected. I place the efficacy of the remedies in the following order:

1. Flame of an alcohol lamp; 2. sulphuric acid; 3. aqua ammonia; 4. glycerine; 5. aqua regia; 6. hydrochloric acid; 7. benzine; 8. hydriodic acid; 9. boric acid; 10. alcohol; 11. nitric acid; 12. cobalt nitrate; 13. infusion nutgalls; 14. tincture solution of ferrous sulphate.

I found that by the use of an alcohol lamp (which, of course, would have to be handled with great care) the results were immediate, and the effect more nearly permanent than by any other of the experiments. The sulphuric acid application was made with a cotton cloth swab, care being taken not to allow any dripping, and so with all other acids.

The effect of the aqua ammonia was almost instantaneous, but the window was frosted again in a short time.

With the glycerine there were very good results—but slight stains on the window, which were subsequently easily removed.

I have had inquiries from store keepers, who have complained about their windows being unserviceable much of the time in very cold weather, and desiring a remedy. I thought the results of my experiments would reach widest publicity through your columns, and consequently give the facts to you.

HENRY C. DEMMING.

Harrisburg, Pa., March 7, 1899.

The Port Arthur Ship Canal.

The Port Arthur ship canal, Port Arthur, Texas, will be practically completed about March 20, when the event will be celebrated in a fitting manner. The canal is designed to extend deep water from the Sabine Pass to Port Arthur, the former having a depth of 25 feet over the bar. The dimensions are the same as those of the Suez Canal—183 feet wide and the depth is 25 feet. The canal is $7\frac{1}{2}$ miles long, and the work was done with the aid of hydraulic dredges. Fourteen million yards of clay, earth, etc., were excavated. The ships' basins, slips, docks, warehouses, and grain elevator are in the course of construction. The harbor is landlocked and is an excellent one.

The Largest Ranch in the World.

The largest ranch in the world is located in Texas, and it consists of more than 3,000,000 acres, or about 5,000 square miles. The States of Rhode Island and Delaware could not contain this immense ranch. About a dozen years ago, states The Ladies' Home Journal, when Texas needed a new State capitol, the legislature adopted a novel plan to get it. A promise was held forth that a vast tract of uncultivated land would be given in exchange for a suitable granite building at Austin. Senator C. B. Farwell and John Farwell formed a syndicate in Chicago and built the capitol, and in due time they came into possession of the immense domain.

Exhibit of Patents and Inventions.

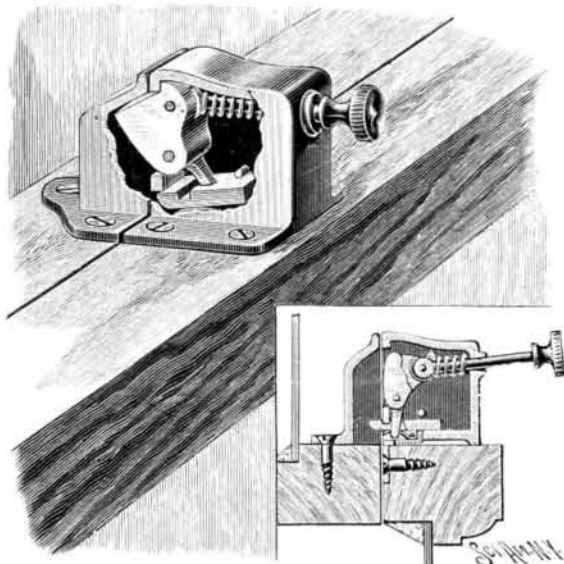
In connection with the Third Electrical Show to be held in Madison Square Garden, New York city, from May 8th to June 4th, 1899, there will be a Special Exhibition of Patents and Inventions. Inventors can bring their models before a large public and interested parties at small expense.

AN AUTOMATIC WINDOW-LOCKING DEVICE.

The window-fastening device which forms the subject of the accompanying engraving is designed automatically to lock a window in such a manner that it will be impossible to raise the sashes from the outside. The fastener is the invention of Mr. George C. Nicholson, Collins Street, Melbourne, Victoria, and has been patented in most parts of the world.

The device consists of a staple secured to one sash, and of a casing containing the locking mechanism, secured to the other sash. This mechanism includes a pivoted tumbler which is operated by a spring-pressed spindle projecting from the casing, and which is provided with a horn engaging a bolt in the lower portion of the casing. This bolt is spring-pressed into engagement with the upper lip of an aperture in the casing, which lip is adapted to fit into a notch in the bolt, as shown in the sectional view.

In unlocking a window provided with this fastening, the spindle is first pulled back until the swing of the horn has forced the notch of the bolt into engagement with the upper lip of the aperture. When the parts are in this position, the tumbler is retracted clear of the opposite sash and of the staple thereon, thus compressing the spring coiled around the spindle, as shown in the sectional view. The window may now be opened; but the raising of the sash will cause the projecting end of the bolt to be depressed by the inner, top end of the staple. The bolt, after having been sufficiently depressed, will be automatically retracted by the operation of the spindle-spring in throwing the tumbler and consequently the horn. Hence, when the window is open, the parts have the position shown in the perspective view. When the window is being closed, the descending sash strikes the projecting por-



NICHOLSON'S AUTOMATIC WINDOW-LOCKING DEVICE.

tion of the tumbler, forces it back, and thus causes the parts to assume their normal locking positions.

The fastener is notable for its novel construction, for its automatic action, and for the means provided to prevent the window from being opened from the outside.

A Right-Handed Monkey.

BY DR. EUGENE MURRAY-AARON.

Mr. Sydney Davis, of Washington, has recently given utterance to the very plausible theory that the strong right-handed tendency of man is due to ages of warfare and strife, during which the shield-holding left hand became less muscularly active, while the development of the club-bearing or javelin-throwing right arm was correspondingly hastened. This interesting thought leads to an inquiry as to the ambidextrous condition of man's lower cousins, the monkey tribe, and especially those of the quadrumana, who, by virtue of their tree-inhabiting and fruit eating lives, have the minimum of warfare and the maximum of acrobatics to develop all four "hands" alike.

In a considerable experience with the monkeys of the American tropics, I have met with but one that could be called either right or left handed. This little creature, a "blue-faced cebus," appeared on close anatomical examination to have the same complete muscular development and quick joint action in all of his limbs. There was apparently no difference in the grasping power of the various hands, if he was compelled to use the one to be tested; nor was there, so far as the two forehands and the right "foohand" were concerned, any preference shown by him in their use. All of the three appeared to be equally useful in climbing, and it was impossible to guess which hand would be put forth to grasp a proffered dainty or a coveted article of finery.

But the left foohand was never used for that purpose unless the others were already engaged or purposely muffled, so that he had no alternative, and then only after a moment's reflection, during which he was apparently trying to devise some plan whereby its use could be avoided. Yet, when he concluded that the inevitable faced him, the grasping was as quick and the

holding fully as firm, so far as I could discover, as though one of his other hands had been used. Strange to say, although so averse to using this left hindhand in the way indicated, he always seemed to prefer it as his temporary treasury, giving it the preference over his mouth, which, in most of his tribe, is the receptacle for valuables until a safe hiding place can be reached. A new brilliantly colored beetle, just brought in and emptied out from my killing-jar, and usually, I regret to say, one I could ill afford to have stolen, or a new coin or bright bit of paper having been spied, Don Juan, for so he was called, would sneak quietly up to it or make a dart at it, as seemed to him most likely to serve his purpose, grasp it in either one of the two forehands or the right hindhand, using whichever was nearest the coveted article, and, quickly transferring it, to the left hindhand, gallop off on the other three legs.

If severely scolded, Don Juan would make for a shelf over the main door to my study, from a bamboo brace to which he would hang for a long time, making remarks on the situation, which from their tone I took to vary between mild expostulation or apology on the one hand and vehement denunciation and, I fear, even simian profanity on the other, as the occasion seemed to him to warrant. While so hanging he almost invariably used two hands, rarely three, and never, in my observation, the left hindhand. His expostulations were usually accompanied with much scratching of the head and rumpling of the hair, which was banged and parted in the middle in the most foppish manner; and an occasional rubbing of the eyes with a disengaged fist added a peculiarly human touch to his dolefulness. Yet, never did I see him use that neglected left hindhand for any of these purposes. If he was in disgrace because of a theft, not yet atoned for by restitution, he usually had the stolen article folded away in that hand and held tightly against his body; if it was disengaged, however, it was never used to scratch the head, rub the eyes, or in the expostulatory gestures that all students of monkeydom are familiar with. The nervous twitching of the fingers of that hand was all that indicated its interest in current events.

Don Juan was a born woodsman, an animated compass and a barometer of more than usual storm forecasting precision. If he determined that the usual time for a naturalist's morning jaunt afield had arrived for me, he attempted to aid in my preparations therefor, getting together such articles as, in his experience as a field assistant, should be taken along. Gifted with an excellent memory of the occurrences of the day before, and apparently with a most active imagination, he decided, in some one of his brain areas, that I was going entomologizing, when, perhaps, I was bent on a fishing trip. Having set his mind on what I took with me the day before, and totally oblivious to the nature of the articles I was busy putting in the pouches of my canvas hunting coat, hanging on the back of a chair, he would busy himself, rushing back and forth from my instrument table to my coat, filling the pouches with a miscellaneous assortment of just what I did not want. These I would, at first quietly and later noisily and with much scolding, return to the table; at which Don Juan would become frantic and rush them back to the coat, with loud cries of remonstrance at my too evident ignorance of what a naturalist really needed in the fields or woods, until finally his worry and anger knew no bounds.

Under such circumstances I have seen him gather up forceps, pliers, a case-knife, a magnifying glass and like articles with wonderful rapidity; but great as was his haste to undo the effects of my ignorance, all this gathering up was done with one or more of the three favorite hands, although the articles were carried to the coat in the despised left hindhand or the mouth, from which they were invariably transferred to the pouches by one of the more active hands. This was the crucial test, in my opinion; for never was he so frantic in his haste or anxious to make every hand count in his work as when he was convinced that I was wrong in my judgment as to my collecting outfit for the day. Even when he became convinced that there was no time to lose in getting home, before a tropical storm should burst over us, when his antics and chattered warnings were accompanied by many annoyances in the shape of hair and mustache pulling, ear twitching, etc., he did not use the neglected hand.

Here, clearly, was a case where a monkey was not ambidextrous, although it appears to be the only case I can find recorded and is certainly the only one in my own observation. Mr. Crowley, Chico, Johanna and the others of the famous big members of their family, were all ambidextrous, so far as their eating and grasping habits made it possible to judge. As I said at first, Don Juan did not appear on careful examination to have suffered any injury which could account for his strong tendency to ignore the usefulness of that left hindhand; nor was I ever able, during a long and intimate acquaintance, to find any explanation for it nor to educate him out of it. It must suffice to say that he will go down in history remarkable as a right-handed monkey; although his feats in woodcraft were calculated to render him equally famous. But they will make another story by themselves.