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NEW YORK, SATURDAY, JULY 30, 1898.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as Ambulances, government, Army, U. S., numbers 27,000 men, Balloon, war, destruction of, etc.

THE PRESENT STATUS OF THE UNITED STATES NAVY.

The Navy Department has just issued a very instructive pamphlet, dated July 1, which gives the list and stations of the officers as well as the full list of all of the vessels in the navy, including those which are building and those which have been acquired. An examination of the tables shows that we have at present 301 vessels, of which 236 are available for war purposes, the rest being unseaworthy or under construction. The "Registry of the Navy of the United States," which was published on January 1, 1898, listed only 141 vessels, of which 109 were available for service, so that in the few months which have intervened between the destruction of the battleship "Maine" we have built and acquired by purchase 126 vessels, and during the same period we have only lost one—the battleship "Maine." At present, the United States navy has 11 ships which are classed as "first rate," which includes all the battleships, the two armored cruisers, the protected cruisers "Columbia," "Minneapolis," and "Olympia," and the monitor "Puritan." There are 18 boats listed as "second rate," including protected cruisers and monitors. There are 22 "third rate" vessels, including cruisers, harbor defense ram, monitors, gunboats, and dispatch boats. There are 6 vessels under "fourth rate," including the dynamite cruiser "Vesuvius" and gunboats and cruisers. We have now 36 torpedo boats built and building and authorized, but in some cases the contract for them has not yet been awarded. We have 12 tugs, 6 sailing ships, 5 receiving ships, and 12 vessels which are unseaworthy. There are 33 vessels under construction exclusive of the torpedo boats, but including the torpedo boat destroyers. We have 38 auxiliary cruisers and yachts, which include the formidable "Harvard," "Yale," "St. Louis," and "St. Paul." We have 33 steamers and colliers, used for supplying coal and provisions and for transport steamers, ambulance ship, supply ships, repair ship, etc. We have 27 tugs and 15 revenue cutters, as well as 4 lighthouse tenders and 2 Fish Commission vessels, but the latter two classes will not prove of much avail in the present war, although the lighthouse tender "Mangrove" has distinguished herself. It is noticed that the three first-class battleships for which contracts have not been awarded are to be named "Maine," "Missouri," "Ohio." The names of the new 2,700-ton monitors are to be "Arkansas," "Connecticut," "Florida," and "Wyoming." The new new torpedo boat destroyers will be named "Bainbridge," "Barry," "Chauncey," "Dale," "Decatur," "Hopkins," "Hull," "Lawrence," "Macdonough," "Paul Jones," "Perry," "Preble," "Stewart," "Truxtun," "Whipple," and "Worden." The following are the names of the new torpedo boats for which contracts have not yet been awarded: "Bagley," "Barney," "Biddle," "Blakely," "DeLong," "Nicholson," "O'Brien," "Shubrick," "Stockton," "Thornton," "Tingey," and "Wilkes." The list of officers shows that we now have 7 rear-admirals on the active list; 10 commodores, 45 captains, 85 commanders, 74 lieutenant-commanders, 325 lieutenants of all grades, 170 ensigns, 70 chief engineers, 66 passed assistant engineers, 52 assistant engineers, 18 naval constructors, 19 assistant naval constructors, as well as 15 civil engineers. The information which the pamphlet conveys regarding the officers is, of course, very slight, but we notice under "Present Duty or Station" Richmond P. Hobson, "prisoner from 'Merrimac.'" The "Expiration of last cruise or tour of sea service" being "May, 1898." Under "Civil Engineers," "Leave of Absence" is placed opposite the name of Robert E. Peary.

LONDON'S FIRE SYSTEM REVOLUTIONIZED.

Commodore Wells, R. N., chief officer of the Metropolitan Fire Brigade, has seen fit to revolutionize the system of dealing with fires which has been in vogue in London for thirty years past. The old system offered great opportunities for a fire to attain considerable headway before it could be checked. It is pleasing to note that the total inadequacy of the old system has been seen at last and steps have been taken to remedy it. For fire purposes London is now divided into five districts, each of which has a superintendent's station and local headquarters. Every outlying station is in telephonic connection with its district headquarters. In past years the system has been that on a call being received at any station it is transmitted to the district headquarters and thence to Southwark, and directly the actual character of the fire is known the process is repeated. In the event of a very large fire, the authorities at Southwark have directed the attendance of what additional aid may be deemed to be required. The chief officer has now issued an order which announces that each station officer should be acquainted in his particular area with the nature and distribution of the buildings, fire risks, water supply, etc. This officer should in ordinary cases arrive first on the ground, and he is to have charge of the engines, ladders, and other appliances, and to send away messages as to the help required. The fires are divided into three classes: "home calls,"

which include the fires which the station officer can manage himself; "district calls," which include all those fires which the nearest engines the superintendent can send on will be clearly able to manage; and "brigade calls," which include all those fires which will probably require the special attendance of a number of men and engines to be detailed from headquarters. As far as it goes, the new system seems to be practical, but at the same time the American system of sending out one or more full sets of fire apparatus with the full complement of men to every fire is far preferable. Every second counts in a fire, and often not only the safety of those in the building, but thousands of dollars' worth of property can be saved by the prompt response of a number of men. The trouble and expense involved in getting out the fire apparatus is nothing compared with the execution which they can do if they arrive during the incipient stage of the fire.

THE CINEMATOGRAF IN MEDICINE AND SURGERY.

Latterly several suggestions, from widely different sources, have been made regarding the employment and possibilities of the cinematograph in medicine and surgery, and while some are impracticable and based upon erroneous knowledge of the needs of the medical art, others are suggestive of real value. For the study of continuous or prolonged abnormal acts and movements, such as the action of muscles during choreic, strychnine, or tetanic spasms, the modifications exhibited by certain reflexes, etc., it may be imagined the instrument can be made readily available; here its limitations are chiefly those bounded by the experience of the operator, or the initial expense entailed by the instrument itself. Again, contrary to general opinion, it is not necessary—not even essential—that all acts should be the result of a single continuous exposure, for the action of the instrument may at any time be interrupted, for hours or even days if desired, and again set in motion. Thus the cinematograph may be used for the purpose of recording and studying the development of rapidly growing neoplasms.

Recently, in London, England, Dr. Parchen exhibited some unique results thus obtained in a case of locomotor ataxia (tabes dorsalis). The inability to stand with the feet together and the eyes closed, and the typical ataxic gait, were demonstrated in a most remarkable way. Equally clearly depicted were the inco-ordinate movements of a patient suffering from partial paralysis; especially well demonstrated was the peculiar wasting of muscles which it is practically impossible to portray by means of ordinary photographic processes. Again, the wasting of muscles and characteristic gait in a case of hip-joint disease were as clearly, and even more impressively, depicted as though the patient had been under direct observation.

It is probable the cinematograph will prove invaluable to the medical teacher, especially for purposes of clinical demonstration and clinical comparison. Patients come and go—often are entirely lost sight of or not available at the moment their services are most desirable—but the recording film is always at hand, since it can be made both permanent and effective. It is a well-known fact in the West—and doubtless also in the East—that it is common for medical schools to retain certain rare and chronic cases as pensioners, merely that they may always be available for purposes of clinical demonstration.

Dr. Fincham, in a communication to The Amateur Photographer (London), points out that the field of the cinematograph, as regards medicine and surgery, is "rich in potentialities;" that just as the discovery of the Roentgen rays first appealed to the wonder-loving public as a scientific curiosity, and now is deemed an essential part of the armamentarium of every hospital, so in the future will this instrument be regarded as a necessity for the pictorial record of suitable cases.

Nevertheless, the cinematograph at present leaves much to be desired as regards accuracy; satisfactory records cannot be had of the finer movements, owing to the flickering of the pictures; but there is little doubt the deficiency will, in the near future, lead to the adoption of mechanical contrivances that will permit of steady impressions. One great advantage offered, even at present, is that films recording unique cases can be made permanent, and so preserved indefinitely; also they can be transmitted easily and safely to all portions of the globe for purposes of illustration and instruction.

PRINTS AND LABELS.

BY PERRY B. TURPIN.

Prints and labels are interesting, if for no other reason, because, unlike other subjects of copyright protection, they are not under the control of the Librarian of Congress; but jurisdiction over them is conferred by Section 3 of the Copyright Act of June 18, 1874, upon the Commissioner of Patents.

Since the decision in 1893 in ex parte Heinz Company, 62 O. G., 1064, the right of registering prints and labels has been recognized, and the distinctions between the same have been well defined; but it is believed, from the limited extent to which the power to register prints

TABLE OF CONTENTS OF Scientific American Supplement

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is availed of by the public generally, that the right of such registration is not, to any considerable extent, understood, and that the privilege is not to a proper degree appreciated.

Prints and labels are alike as to requisites for registration: they must both have artistic merit, and a print or label which is merely descriptive in words of the article or the contents of the article to which it is applied or to which it relates, involving nothing beyond the skill of a typesetter, is not proper subject matter for registration. But, if the label or print has artistic merit, it may be registered, if properly applied for. This requisite of artistic merit is essential to the registrability of both prints and labels; but in the respect of use, prints and labels differ.

The Patent Office rule following the statute defines a label as "a device or representation borne by an article of manufacture or vendible commodity." Note, then, that the label is borne by the article; that is to say, applied to the article. Now, the same rule defines a print as "a device or representation not borne by an article of manufacture or vendible commodity; but in some fashion pertaining thereto, such, for instance, as a pictorial advertisement thereof." This is the important difference between a label and a print, the former being "borne by an article of manufacture" and the latter "not borne by an article of manufacture."

If a print "bears a device capable of sequestration as a trade mark," it can be registered as a print without respect to the registration of such device as a trade mark. (Ex parte United States Playing Card Company, 63 O. G., 206.) This is because a print, not being applied to an article of manufacture, is not in any sense a trade mark.

A label being in its application to the article of merchandise more like a trade mark, it was held, prior to ex parte Mahn, 82 O. G., p. 1210, that if such label bore a device capable of registration as a trade mark, "it could not be registered as a label until after the trade mark was registered." The said decision, in ex parte Mahn, has modified the practice of the Patent Office, the Commissioner of Patents saying: "There is no authority of law for the requirement for the registration of the trade mark matter contained in a label as a condition precedent to the registration of the label." This, of course, is based on the assumption that the label is a proper label for registration, that is, "of artistic merit, indicating pictorially or otherwise the article or the contents of the article to which it is to be applied," as, if the label is simply a trade mark, it cannot be registered as a label.

Inasmuch as both prints and labels are registered, if at all, under the copyright law, registration must be effected before the label or print is used or published.

It is evident, therefore, that a print or label to be registered need only, in the case of a label, involve artistic merit and indicate, pictorially or otherwise, the article or the contents of the article to which it is applied; and in the case of a print, involve artistic merit and in some fashion pertain to the article of manufacture or vendible commodity, and that registration be effected before publication or use.

Whether registration as a label will protect use as a print, or vice versa, is not settled; but there is no reason why the same device or representation should not be registered to the same applicant, both as a print and as a label, and the slight expense of registration recommends such course.

Prints and labels, when used, should be marked "copyrighted," with the date—not "registered."

The very slight expense of applying for copyright of labels and prints is worthy of consideration, especially as the government fee is refunded if registration is refused.

In these times, when there is so much activity in advertising wares, when prints are so commonly used on store counters and walls in such advertising, and when the printers' and lithographers' arts render the production of artistic prints and labels so economical, it seems advisable to call the attention of the mercantile public to the present practice as to registration, in order that they may secure the protection for their artistic productions afforded by the statute.

THE VISIT OF COLONEL KRAG.

Colonel Ole Herman Johannes Krag, chief of ordnance of the Norwegian army and inventor of the Krag-Jorgensen rifle, who recently came to this country on a leave of absence, has returned home. Colonel Krag was deeply impressed with the United States, and especially with the intelligence of its citizens. "For this reason," he said, "I believe that the United States can, out of such material, equip soldiers to serve behind rifles much more quickly than any other country." The Krag-Jorgensen rifle is fully described in our "Army and Coast Defence" number. The United States government secured the patent for the manufacture of this rifle in this country by paying Colonel Krag a royalty of one dollar per rifle. About 75,000 rifles are already in the hands of the military authorities in this country, and the government ar-

senal at Springfield is now turning out the rifles at the rate of 250 a day. In a short time the output will be at the rate of 500 a day, and Congress has been asked to appropriate \$800,000 for the expense of manufacturing additional guns. The Norwegian and Danish armies are equipped with this rifle, and France has shown an inclination to adopt it, but hesitates because it is not a French invention.

THE HEAVENS IN AUGUST.

BY GARRETT P. SERVISS.

The long, warm evenings of August, when the atmosphere rests quiet and steady after the fierce heats of midsummer, are a joy to all lovers of the stars. Sitting on lawn or veranda, one can watch, without chill or discomfort, the merging of twilight into darkness, the gradual withdrawal of the rose and azure and gold tinted curtain that conceals the universe and the slow forthcoming of the stars—at first singly and here and there; then in pairs and sets, which forewarn the experienced star-gazer of the emergence of the constellations; and, finally, in groups and swarms and starry clouds, that have been the wonder of all the ages, and are as refreshing to the imagination to-day as they were when the shepherds watched them in Chaldea, or the old Greeks saw them overhead as they tramped across the hills of Arcadia to attend the Olympic games.

Early in the evening, at the beginning of August, the brilliant constellation Scorpio is conspicuous just above the horizon in the south. Its chief star Antares, usually described as red, is one of the most interesting in the heavens. In our latitudes a first-rate 4-inch telescope, under favorable atmospheric conditions, should easily show the minute green companion of Antares. The distance is only about three seconds of arc, and a good magnifying power, say 150 or 200 diameters, should be used. At present the planet Saturn appears as a member of the constellation Scorpio, shining a few degrees north of Antares.

East of Scorpio, where the Milky Way appears very brilliant, is Sagittarius, with the inverted figure of a short-handled dipper visible among its stars. Higher are Ophiuchus and Serpens, with Hercules near the zenith. Hercules is flanked on the west by the Northern Crown and on the east by Lyra, whose great blue-white gem Vega is one of the chief glories of the summer nights. West of the Northern Crown is Bootes with Arcturus, and east of Lyra is Cygnus, with the striking figure of the Northern Cross. South of Lyra and Cygnus the constellation Aquila attracts the eye by its singular combination of a bright star, Altair, accompanied on two sides, at a distance of a few degrees, by a fainter star.

THE PLANETS.

Mercury is an evening star and remains during August in the constellation Leo. On the 9th it is at its greatest eastern elongation and crosses the meridian about an hour and three-quarters after the sun.

Venus is the cynosure of the sunset sky, far more brilliant than Jupiter, although less than half as bright as it will be in October. The fact has recently been pointed out that, for observations of Venus, telescopes of comparatively small aperture are very effective. Daylight observations are best, and amateurs can make them without great inconvenience. It is only necessary to know nearly the place of Venus in the sky at the time of observation in order to find the planet in full daylight. During August, Venus will cross the meridian not far from a quarter before three o'clock, or, in other words, two hours and three-quarters after the sun. But it is considerably south of the sun—a fact that must be properly taken into account in searching for the planet on the meridian. On August 10 Venus will be only five minutes of arc north of the celestial equator when crossing the meridian of Washington. It will be easy to find her then, anywhere in the eastern United States, by pointing the telescope, a little before a quarter to three o'clock, toward true south, at an elevation corresponding to the difference between the latitude of the place of observation and 90°. Suppose, for instance, that the latitude is 40°, then the elevation of the telescope should be 50°. If the planet is not found directly in the field of view, a little careful sweeping will be certain to pick it up. A cap with a circular hole about half the aperture of the telescope should be placed over the object glass, unless the telescope is less than three inches in diameter. Any markings seen with certainty on the disk of Venus should be carefully recorded.

Mars is gradually coming more clearly in evidence as a morning star, although still distant and inconspicuous. It is in Taurus at the opening of the month, about 5° north of Aldebaran, and at the close it will be found just over the border in Gemini.

Jupiter, in Virgo, moves slowly eastward, passing south of the celebrated double star Gamma, in the course of the month. On the 14th Jupiter crosses the meridian at 3 o'clock in the afternoon. Jupiter and Venus approach one another, until, on the evening of the 18th, they will be only about 2° apart.

Saturn remains in Ophiuchus, just above Antares in Scorpio, crossing the meridian early in the evening.

Its chief satellite, Titan, is at western elongation at midnight on the 2d and at eastern elongation in the evening of the 10th, returning to western elongation an hour before midnight on the 18th.

Uranus is in Libra, on the border of Scorpio, a few degrees west of the double star Beta Scorpionis. Neptune remains near Zeta Tauri.

THE MOON.

There are two full moons in August, on the 1st and the 31st. The new moon occurs on the 17th, the first quarter on the 24th, and the last quarter on the 9th.

The moon is nearest the earth on the 28th and farthest from it on the 12th.

The lunar conjunctions with the planets occur as follows: Mars, 11th; Neptune, 12th; Mercury, 19th; Jupiter, 20th; Venus, 21st; Uranus, 24th; Saturn, 25th.

METEORS.

The celebrated August meteors appear on the night of the 10th, radiating from the constellation Perseus, which rises in the northeast.

A NEW CENTER OF THE PLAGUE.

Prof. Koch has announced the results of his investigations on the plague. He declared that the view entertained some ten years ago that the plague no longer threatened mankind must be abandoned, for there are now no less than four plague centers, the last of which Prof. Koch discovered in the Hinterland of German West Africa. Former outbreaks have been traced to Mesopotamia, where it has never entirely disappeared; but in China the plague is endemic, the plague center being in the Province of Hunan. There is a second plague center in Thibet; the latest outbreaks in China and India have had their origin there. The third center is in the neighborhood of Mecca, on the west coast of Arabia, and this center is of the greatest possible importance in view of the great number of pilgrims which annually visit the sacred city of Mohammed. Nothing was known of any other plague center until Prof. Koch discovered the fourth was in equatorial Africa. It was found that a devastating disease prevailed at Kissiba. Prof. Koch suspected it was the plague and proceeded from India to West Africa, and was able to diagnose the disease as the bubonic plague. Nine out of ten of those infected died. The disease was communicated to rats and monkeys, and it was found that an outbreak of the plague among rats frequently precedes an epidemic among human beings, and the rat plague may always be regarded as a salutary warning. The old explanation that it was found wherever dirt and social misery prevailed is inadequate. No satisfactory answer has yet been given as to the real origin of the disease.

DESTRUCTION OF A WAR BALLOON.

The war balloon used in reconnoitering the position at Santiago was destroyed. The balloon was held by eighteen men by a rope which was 1,000 feet long. The men moved about in various parts of the field, carrying the captive balloon with them. A telegraph wire connected the basket of the balloon with the ground, and observations were transmitted to the officers below. The balloon was received by a scathing fire. Three shells from a shrapnel battery tore great holes in it, and the showers of bullets made it resemble a great sieve. The three men who were in the basket at the time the balloon was destroyed escaped with but one slight injury. The balloon was finally landed in the middle of a stream waist deep, just as two regiments of dismounted cavalry were charging a Spanish ambush. The balloon has been an effective adjunct in reconnoitering in the Santiago campaign. It will be remembered that in the siege of Paris the invested Frenchmen sent up many balloons to carry deputies, dispatches, and mail, and Herr Krupp made special cannon to fire upon them. It consisted of a long barrel mounted on a standard so that it could be readily turned in any direction. The standard was secured to a four-wheeled platform wagon.

EFFECT OF X RAYS ON COLORS.

Sir William Crookes has shown that various gems and minerals glow with a beautiful tinted phosphorescence in the cathode rays of his vacuum tubes, and M. Leconteur and Mr. A. C. Cossor applied this fact to the examination of precious stones and minerals of uncertain constitution. A large number of gems of various kinds, shown under the rays, were quite altered in color by the phosphorescence. Four large Burmese rubies, for example, weighing twenty-two and a half carats, glowed a fiery red. Singalese rubies were easily told from Siamese by the phosphorescence. Diamonds became a light blue or green; moonstone gleamed like moonlight just after the rays were withdrawn from it; American dolomite was red; tungstate of calcium, a turquoise blue; sea shells, a rich golden yellow and light blue, and so on. Questionable stones can thus be tested without injury to the gem. Moreover, the method is applicable to toxicology in the case of alkaloids, and will be useful in medical jurisprudence.