Miscellaneous Notes and Receipts.

To Raise the Pile of Velvet.—A good method to raise damaged and pinched pile up again is as follows: Cover a hot iron with a wet cloth, lay the velvet or plush over it and beat carefully with a clothes brush. Lay the stuff on a smooth place and do not touch until it is quite dry.—Leipziger Färber Zeitung.

Lime Water for Disinfection.—A very cheap and easily prepared disinfectant is lime water. If wash is laid in saturated lime water, it must be left therein for 48 hours to insure a total extermination of all germs. If one desires to get the wash disinfected after 24 hours, it must be previously rinsed off in supersaturated lime water and left to remain in it for some time; then it is put in fresh lime water and left therein for 24 hours. Wool is very unfavorably changed in color and firmness by treatment with lime water, while linen and cotton are not at all affected as regards color; linen does not lose any of its firmness, cotton very little. Hence, woolen goods should not be disinfected with lime water; of course the lime water must not be very strong.—Staats Zeitung.

Production of Deep Black Writing Ink.—First prepare a clear logwood extract solution, by dissolving 200 parts best French logwood extract in 1,000 parts water, heating in the steam bath. Place the solution aside and allow to settle for about 8 days. Pour off clear from the sediment which has formed. Thin 200 parts logwood solution with 500 water, heat in the steam bath to about 90° C. and add drop by drop the following oxidation mixture prepared from 2·0 potassium bichromate, 50·0 chrome alum and 10·0 oxalic acid dissolved in 150·0 water. Maintain the temperature another half hour at 90° C., thin with water to obtain 1000 total weight, add one per cent carbolic acid and allow to settle two to three days. Express clear and fill in bottles.—Neueste Erfahrungen und Erfindungen.

German Artificial Indigo Alarms the Indian Indigo Planters.—Since the Badish Aniline and Soda Company, at Ludwigshafen on the Rhine, has placed its "pure indigo" on the market at a price which admits of competition with the natural product, the Indian indigo planters are naturally very much alarmed. It is correctly assumed in India that the process to produce artificial indigo will be quickly improved upon and cheapened, and that it will finally be possible to throw the artificial article upon the market at a cheaper price than the natural indigo can be sold at. Considering the exceedingly great value which the indigo trade is to East India, the press of that country discusses freely the new state of affairs. The Capital, a journal highly esteemed in India, admonishes the owners of indigo plantations not to lose courage, but to try their best to minimize the cost of production, it being more than likely that, if experienced chemists are engaged, the extraction of indigo from the plant may be increased, thus cheapening the product and improving its quality. Then a competitive war between the artificial and natural indigoes could well be carried on. From the same journal we learn that the value of indigo exported from Bengal is 4½ to 5¼ crores (1 crore= 10,000,000 rupees). The largest part by far of East Indian indigo goes to England; Germany receives direct 32 lakhs' worth, Austria-Hungary and France about the same each; the United States of America takes 57 lakhs' worth (1 lakh = 100,000 rupees). The average amount of the two dyestuffs of indigo contained in good Kurpah indigo is 50 to 55 percentum, in the Bengal variety 70 to 75 percentum.—Färben Zeitung.

Cotton Spinning Mills in China.—The Chinese are too much imbued with the true business instinct, says the Deutsche Wirker Zeitung, to be unmindful of the advantages derivable from the use of steam power in their factories, but the mandarins prevented such innovations, lest the revolutionary spirit might be introduced into the country at the same time. The unfortunate war with Japan gave a striking proof of the fact that China would be an easy prey of her neighbors if the present system of barricading were continued much longer, and thus the mandarins have given up their resistance in many respects. Among others, several cotton spinning mills were erected in Shanghai in 1896, which will start this year with 275,000 spindles, having been equipped according to the latest systems. If the experiment proves successful, which scarcely admits of any doubt, considering the low wages and the great adroitness of the workmen, many more factories will spring up. It need not be apprehended that they will send their calicoes and other ready goods to Europe, etc., thus becoming competitors; but, nevertheless, their influence will be felt, in that they will claim the Chinese market for themselves and crowd out the English now holding the market. The latter will be compelled to seek substitution somewhere else, which will most likely cause a sharper competition with Germany, etc.; also, as regards the raw material, the new spinning factories will exercise an influence. They will first take the raw cotton from China and then from the neighboring India, and the popular Indian cotton will in consequence become scarcer and dearer. At present the import of cotton goods into China is very considerable, and in 1895 represented a value of 53,000,000, in 1896 79,000,000 Haikwan tael (a tael is about 85 cents), the total value of all imported goods being 171,000,000 and 202,000,000 Haikwan tael respectively.

Transplantation of Muscles in the Treatment of Deformities.

The ingenious method of remedying loss of power and deformity from paralysis of certain muscles by attaching their tendons to those of others is of recent growth. In The Boston Medical and Surgical Journal of November 11, 1897, Dr. Joel E. Goldhurst describes an important advance on this method made by American surgeons in the last few years--the dissection out of the muscles and their direct reattachment to others. In a large number of cases of infantile paralysis the sartorius escapes. Being a flexor of the knee, its action is useless or harmful when extension is lost from paralysis of the quadriceps. To improve the limb and restore extension Dr. Goldhurst transplants the sartorius and attaches it to the quadriceps tendon just above the patella. He has operated on five patients with marked improvement in three and failure in two, which he attributes to imperfect methods of attaching the muscle. He operates as follows. A six-inch longitudinal incision is made on the inner side of the thigh with the middle opposite the top of the patella. The sartorius is dissected out, cut off at its insertion, brought forward and attached to the muscular fascia just above and a little to the inner side of the patella. The attachment must be made firmly by splitting the fascia and drawing the muscle through, so that it becomes adherent to both inner and outer surfaces. Kangaroo tendon is used for sutures, being the best material. The wound is then closed and the whole thigh is bandaged, and finally a plaster of Paris bandage or a long splint is applied. The patient is kept recumbent for two weeks at least, gentle motion is commenced at the end of three weeks, and the plaster is entirely omitted at the end of from five to six weeks. One case was that of a woman, aged twenty-two years, paralyzed from early childhood, who had no power of extension or of bearing weight on the limb unless the knee was fixed artificially, and who had a flail-like leg, flinging gait, and used a crutch constantly. After the operation, though still somewhat lame, chiefly from weakness of the foot and ankle, the mechanical difficulty at the knee and the gait were almost entirely corrected, the leg was extended normally, and she was able to do housework.—Lancet.

The Annual Electrical Exhibition.

The electrical exhibition, which has always been one of the most attractive spring exhibitions, will open this year on Monday, May 2, at the Madison Square Garden, and continue through the month of May. We believe one of its chief promoters is the New York Electrical Society, and arrangements will be made for several interesting experimental lectures.

Mr. Edison will exhibit a model built for him by Mr. Sigmund Bergmann, which illustrates the process he is so successfully using in separating iron from ore. This model will be kept running by a small motor, and the iron will be continuously separated from the crushed rock in full view. Samples of crushed rock in its various stages, as well as samples of the separated ore and of the briquettes which are sent to the furnace, will be exhibited. There will be also some four or five ton masses of rock, which Mr. Edison takes bodily out of the hillside by means of huge excavators, and the magnetic condition of these ponderous masses will be shown and tested by magnets. Photographs of the various parts of the works will be shown, so that the whole will constitute one of the most instructive demonstrations possible. This valuable exhibit will be placed along one side of the concert hall at the Garden, in company with a number of very interesting special features which have already been arranged for.

The Reindeer Expedition a Failure.

The failure of the Alaskan reindeer expedition was announced to the war department on April 18, 1898, in a telegram from Brigadier-General Merriam, commanding the military department of the Columbia. This telegram summarizes the report from Dr. Sheldon Jackson, from Dyea, to the effect that the reindeer are a failure in Alaska for want of proper forage and useless for an exploring expedition there, and many of those sent there are already dead, but enough moss has been found, so that part of the herd may be saved. The time lost will compel reorganization of exploring party No. 1, if it is to go on, but on the advice of Captain Ray and his own judgment, Dr. Jackson recommends the recall of the expedition. Acting on the recommendation of General Merriam, an order was issued at the war department on April 18, relieving Captain Brainerd, who had command of expedition No. 1, from further duty with the expedition in Alaska and directing him to report in person to the Commissary-General of Subsistence at Washington.

Correspondence.

The Classification of Warships.

To the Editor of the SCIENTIFIC AMERICAN:

I suggest that you prepare and print an article showing the utility, efficiency, etc., of the various types of war vessels, viewed from a technical standpoint. I venture to say that a large majority of the readers of the SCIENTIFIC AMERICAN would appreciate some information of this character regarding the general definitions of such words as "first-class battleship," "armored cruisers," "unarmored cruisers," "torpedo boats," "torpedo boat destroyers," etc.

To illustrate the maze which newspaper articles, and even articles in the SCIENTIFIC AMERICAN, have produced, I propound the following problems:

1. If a cruiser carries as heavy guns as a first-class battleship, what advantage is there in building such a ponderously armored vessel as the latter, as our modern rifles pierce any armor used on a battleship?

2. If a battleship carries as many torpedo tubes as a torpedo boat, why build torpedo boats, as the unerring aim of our modern guns makes it just as easy to hit as a battleship, which is armored?

3. If a torpedo boat is a strong vessel, and a torpedo boat destroyer is a stronger one, then why build torpedo boats? etc.

Judging from current information on this subject, the whole science is a huge conglomeration of inconsistencies. This can't be. J. B. BRIGHAM.

Erin, Tenn., April 18, 1898.

[In the SCIENTIFIC AMERICAN SPECIAL NAVY SUPPLEMENT, notice of which has already been announced, will be found a lengthy article of the kind asked for by our correspondent. It is accompanied by four diagrams which show the principal types of warships, and the text answers very completely the questions asked by Mr. Brigham. This article is inserted at the commencement of the number with a view to furnishing the reader with sufficient knowledge of the classification and characteristics of the various types to make the descriptions of the individual ships that fill the forty pages of the issue thoroughly intelligible.

Replying to our correspondent's questions:

1. The efficiency of a warship is determined by the possession of the double qualities of attack and defense. A cruiser does not, except in rare cases, carry as heavy guns as a battleship, and then she only carries one or two of them, as in the case of the Spanish "Viscaya." These guns give her the ability to attack a battleship, but they provide practically no defense. Complete belt and barbette armor alone can do this, and for want of it in a duel the battleship would sink the cruiser long before the cruiser could get in a vital shot through the 18-inch armor of the former.

2. The torpedo boat is built for the sole purpose of carrying and firing torpedoes; in the battleship the torpedo, like the ram, is merely an auxiliary weapon, to be used if the ship should come within close range (500 yards or less) of the enemy. Fifteen hundred to two thousand yards will be the probable fighting range of modern fleets. Theoretically the torpedo boat is not supposed to attack by day. It is supposed to operate by night or in thick weather. Invisibility and swift movement are essential to a successful attack; hence the torpedo boat is made small and swift. It is supposed to creep up as close to a fleet as possible without detection, and then when the searchlight reveals its whereabouts it will make a dash at full speed through a hail of rapid-fire shells and machine-gun bullets. Its small size and high speed render it a difficult object to see and hit.

3. The destroyer is larger than the torpedo boat and more liable to be detected and sunk by shell-fire. Many experts consider that we are going too far in building destroyers of 400 tons, as the valuable quality of invisibility is thereby lost.—ED.]

The New York Public Library.

It is stated in the Bulletin of the New York Public Library that the total number of periodicals and transactions of societies to which the library is subscribing, for the year 1898, is 2,502. Of these 483 are American, 497 British, 595 French, 660 German, 125 Italian, 36 Scandinavian, 27 Belgian, 16 Dutch and 12 Russian. During the calendar year ending December 31, 1897, the total number of volumes received by purchase was 16,098, and by gift 10,128, making a total of 26,226. The total number of volumes catalogued and accessioned during the same period was 29,792. The number of pamphlets actually received during the year, by purchase, was 10,350; by gift, 40,247; and the total number catalogued and accessioned was 15,274. The total number of cards written during the year was 156,925. In addition to this, 15,404 slips from the printer were written, and for each of these slips five printed cards were obtained. The total number of cards in the index catalogue, which was open to readers, on the 31st of December, 1897, at the Astor Branch was about 80,000, at the Lenox Branch it was 27,800. The total number of readers during the year was 103,384, and the number of volumes called for by readers' slips, outside of those taken from the free reference shelves, was 304,466.