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THE SCIENTIFIC AMERICAN SUPPLEMENT.

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For the Week ending April 29, 1876.

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Laundry Blue.

A good washing blue is made as follows: Make a solution of prussiate of potash, 2 ozs., and another of protosulphate of iron, 1 oz.; add the second gradually to the first, until the precipitate almost ceases to fall, then strain through linen, add water, add continue the washing until the blue color begins to dissolve in it, when it may be at once dissolved in distilled water and dried.

THE PRACTICAL EFFECTS OF PHYSICAL STRAIN.

Dr. B. W. Richardson, in his recent admirable work on the "Diseases of Modern Life," devotes a chapter to a subject to which we have repeatedly alluded, and to which, in view of the athletic competitions to occur during the Centennial, the attention, not only of those in training for such contests, but of those who favor athletic sports in all forms, may well be directed. We mean disease induced from physical strain, physical overwork in short, which too often reduces the fairest specimens of muscular humanity to abject wrecks.

It is not difficult to find answers to the question: "In what manner does overwork of a physical kind injure or kill?" During life the forces by which the life is manifested are balanced against time. The active animal machine must rest and recruit; time, an absolute immateriality, flows on unceasingly, destroying as it flows silently and surely.

Generally speaking, physical overwork injures by the destruction of those parts of the body on which the involuntary acts of life depend, namely, the muscles and nervous structures engaged in the digestion of food, the circulation of blood, and the respiration. When these organs fail, every other portion of the system dependent on these likewise succumbs.

The first disease mentioned is aneurism of the aorta, the large blood vessel which rises from the left side of the heart to convey arterial blood to the body. Its cause is a simple mechanical result. The heart during violent exertion (as in rowing spurts), working at high pressure, drives ahead a current of blood which, instead of making its course in steady circuit through the aorta, is brought back by concussion, and falls like a water hammer at the place where the semi-lunar valves prevent its return to the heart.

The second injury is wearing out of the heart. This is common to persons who practice physical exertions, not violently but persistently. The right ventricle of the heart, which maintains the circuit of blood through the lungs, is much thinner than the ventricle on the left side, which carries the blood over the body. If this ventricle, which drives some 18,750 lbs. of blood in twenty-four hours, be overtaxed, it must necessarily weary; and as the heart not only supplies the rest of the body but also itself with food, it follows that, if it fails to supply the body, it fails to supply itself.

A third disease is just the reverse of the preceding, and is due to the heart becoming too powerful. Its muscular structure is unduly developed on both sides, its stroke is too

severe, and, if the nervous power by which it is governed be not proportionately balanced, it becomes intermittent in its work. These conditions follow closely upon boat and foot races and all fierce competitive exercises. Of the undue action of the organ, the affected person is painfully conscious, the breathing is oppressed, the muscular tone decreased and the end of all is premature disorganization of remote organs and comparatively early death.

"By skillful training," says our author in conclusion, "it is quite true that men may be and are brought to a fine external standard; but the external development is so commonly the covering of an internal and fatal evil that I venture to affirm that there is not in England a trained professional athlete of the age of thirty-five who has been ten years at his calling who is not disabled. He may hold on sustained by a will which cannot bend to defeat; he may win bravely; then win, and only just win; then tie some new antagonist; then lose and, urged by friends whose ardor is damped, retire, but he will soon die. The falling-off which has been observed by patrons or admirers before actual failure means not want of skill nor stiffness of joint, but actual overworked, worn-out heart and blood vessels; it means, in fact, now a race for life rather than for fame."

THE VALIDITY OF PATENTS.

The inexperienced purchaser of a patent does not generally appreciate the importance of having its claims examined, and their validity and scope defined by some person experienced in such matters, before parting with his money. It is not unusual for the assignee, just as he is commencing the manufacture of articles under his recently purchased patent, to find that it is an infringement upon some previously issued patent, and that he has not only made a worthless investment, but that he is likely to get mulcted in damages if he proceeds with his manufacture.

We therefore recommend any person who is about to purchase a patent, or about to commence the manufacture of any article under a license, to have the patent carefully examined by a competent party, and to have a research made in the Patent Office to see what the condition of the art was when the patent was issued. He should also see that the claims are so worded as to cover all the inventor was entitled to when his patent was issued; and it is still more essential that he be informed whether it is an infringement, as above suggested, or not.

WHAT THEY SAY ABOUT US.

We should be lacking in appreciation of a great deal of kindness did we not occasionally acknowledge a few at least of the good wishes and compliments which our labors call forth. It would be impossible to publish all or even a tithe of our correspondents' good opinions; but the limited number which we make room for may be taken as samples indicating the drift of all. A writer, to whom Wrinkles and Recipes has been sent as a premium, says: "I do not send you clubs to be rewarded for it, but I feel it a duty to distribute the SCIENTIFIC AMERICAN among my fellow men, because they cannot benefit themselves any better for the money, and nobody ought to be without the paper."

The SCIENTIFIC AMERICAN SUPPLEMENT is likewise meeting a wonderful share of public approbation. Speaking of the excellent series of illustrated articles on mechanical drawing, now in progress of publication, one writer considers them "worth much more than the subscription price of the paper," and he adds: "While the SUPPLEMENT is so fine, it in no way lessens the value of the SCIENTIFIC AMERICAN." It enhances the worth of the older journal, we might continue, because, through the large accession of space gained by its pages, we are enabled in both journals to present not only a wider range of valuable information, but to treat the same more elaborately and completely than otherwise would be practicable.