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THE SCIENTIFIC AMERICAN SUPPLEMENT.

No. 303,

For the Week ending October 22, 1881.

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AMERICAN ART IN TOOLS.

The SCIENTIFIC AMERICAN has had frequent occasion to commend the artistic construction of American tools and machines, and has unsparingly condemned the lofty disdain with which the self-constituted artists—in reality mere picture makers and copyists for the most part—have looked down upon everything mechanical as of necessity inartistic. The great truth that genuine art effects have always and in all countries resulted from work in which the art element has been held subordinate to utility, has been too largely overlooked in the art schools; and while the would-be artists have accomplished little and added less to the world's stock of artistic forms and ideas, the despised artisans have developed—in the one field in which their work has not been misguided by conventionally artistic designers—results which command the admiration even of artists and art critics. This simply because their chief aim has been to make not "artistic" machines and tools, but such as should be best adapted to perform the work required of them, with the least outlay of material and working force, not disregarding shapeliness and harmony of proportion.

Unexpected confirmation of the correctness of our position, heterodox as it may have seemed, appears in a communication from Florence, Italy, to the New York *Times*. The writer, Mr. J. J. Jarves, has been studying some illustrated trade circulars which American merchants have sent to that market. As an art critic he finds in them new ideas regarding American art.

After reviewing rather caustically and at considerable length the failure of American artists and architects to do much more than to copy in a fragmentary and inartistic way the styles, designs, and decorative ideas of other races and ages, with no central creative principle as a guide, Mr. Jarves says:

"The finest art yet developed in America, one in which my countrymen excel all other peoples, is in a direction which they themselves have never recognized or suspected. They have perfected it in its department simply because they have been governed by sound principles joined to a keen consciousness of lines and forms, wedding sharpest practical use to completest beauty of its kind by unconscious pursuit of perfection—in a very limited direction, it is true, but one which forms the starting point for all others, highest art inclusive. I refer to our tools—the axes, hatchets, spades, shovels, hammers, and other metal weapons, by which we hew, plant, and conquer our virgin soil and tame it to our needs. So shapely are they, so nice their gradations of lines, so thoroughly adapted to their ends, graceful, light, and strong, bright and cheery to look at, honest of purpose, sincerely made, that there is in them a touch of the æsthetic as well as the sense of the artistic, unmistakable as the repose and beauty of Greek art. Their makers have worked better than they knew, and nature has led them into art while thinking only of use."

If Mr. Jarves could go into many of our machine shops and study as intelligently the construction and admirable adaptation of our larger and more complicated machines, he would find them as worthy of admiration as the simpler tools he so justly commends. In the designing and construction of these the conventionally misinstructed "artist" has had no hand. The mischievous though unrecognized work of this class of designers is seen by Mr. Jarves, when he compares our tools with more ambitious products—furniture, organs, pianos, etc.—good in themselves practically, but made hideous by abortive attempts to make them beautiful. These—the work of professional designers—tell, he says, "a story of defective æsthetic training, and what deformity is sure to result from attempts at ornamentation before the taste is sufficiently trained to distinguish artistic truth from falsehood. If the makers of these things would simply try to perfect them, keeping their objective aims strictly in view, following the example of the tool makers—and I can include in some degree makers of wooden ware—they would produce far more artistic work in the end than they are now doing with all their eagerness to recommend their wares by labored, overdone decoration. Theirs is the slang of ornament, as ungrammatical and false as pigeon Chinese or backwoods speech, and tenfold more unnatural. We cannot make any substantial progress in industrial art until this whole haphazard system of decoration is thrown away, and we begin anew at the right end, *i. e.* learn the simple alphabet of art before trying to make eloquent speeches in its language. Years ago, when the material interests of the nation, and its heart, also, went oceanward in seeking to build the fastest ships, our builders, following the hints of nature and keeping their own aims steadily in view, succeeded in producing the most beautiful vessels possible; perfections of marine architecture, complete works of art, the like of which the world seems destined never again to witness. This was the result of knowing what they wanted, and, perseveringly studying means to ends, perfecting the ships as to character, and consequently as to comeliness; for even in material things the spiritual holds sway and begets beauty from truth of form. I honor these American tool makers as serious pioneers of American art, unwittingly though it may be to themselves. Theirs is the correct principle and right path of labor and progress."

There is a popular cry just now, and a just one, for a multiplication of schools of decorative art, schools in which our young artisans shall be trained to be artists also in their respective callings. In the right hands such schools may be and must be of inestimable value. In the wrong hands they cannot fail to be mischievous. If their motive is "art for its own sake," they may succeed in teaching our artisans to make pretty imitations of antiques and such like, but nothing better. At the worst they may do much to turn our workmen from "the correct principle and right path of labor and progress." The art which has sprung up in our machine shops from sincerity of purpose and a practical sense of economy and fitness, looking first to utility and then to beauty, is the art which the new schools should encourage and cultivate.

A TEA CULTIVATOR WANTED.

The manager of a large tea farm in India appeals, through the SCIENTIFIC AMERICAN, to American inventors for what we may call a spading machine, to be used in the cultivation of tea plants; the machine to be worked either by bullock or steam power.

The tea bushes on the estate in our correspondent's care are mostly planted four feet by four feet apart, in plots eighty plants broad by four hundred and twenty plants long; a few acres are planted four feet by five feet and five feet by five feet, in fields of the same length and breadth. Many tea gardens, however, are planted five feet by five feet. The tea bush grows from three to four feet high; it occupies about a square foot of ground at bottom, and at top spreads so that the lines of bushes almost (sometimes quite) touch each other. The nearest approach in America to a tea field, our correspondent thinks, is a plot of gooseberry bushes, which somewhat resemble the tea bushes, minus the thorns. In general aspect an ordinary cotton field might be compared, we imagine, to a tea field; and possibly a machine suited for the cultivation of the one might be readily adapted for use in the other.

The India tea fields are dug by hand from twelve to fifteen inches deep, the upper surface, grass, etc., being turned over and buried and the subsoil brought up to the top. A day's work for a cooly is to dig one line across a field, or 1,280 square feet. The ordinary plow will not answer for this work, as it leaves one side of the bushes uncultivated and cuts the roots of the bushes on the other. The horse hoe or cultivator has been tried, but it does not cut deep enough, it does not turn the soil over, and it injures the outer stems of the bushes.

What is required is a machine working a blade or blades set at right angles to the handle, with an up and down motion, and so operated as to turn the soil over. It must dig to a depth of fifteen inches and turn the soil thoroughly. It must dig close to the root of the plant, yet not injure the side stems; and it must be able to do much more work than a cooly can do—say ten or twenty times as much, when drawn by a bullock or by a fixed steam engine working with wire ropes. A machine of this character, able to compete successfully with cooly labor, both in cheapness and efficiency, would bring, our correspondent thinks, a small fortune to the inventor, "as there are upward of a thousand tea gardens in India hard up for coolies and looking out for something of this kind."

We may add that the inventor's right may be protected in India by patents. Also that the extension of tea culture in Java, Formosa, and other islands, not to mention Japan or China, would seem to offer a wide field for the introduction and sale of a successful cultivator. The same machine might also, as already suggested, be adapted to the requirements of cotton and other fiber plants.

Our correspondent's address is R. B. Macnaughton, East Hopetown Estate, Dehra Doon, British India.

The Work of the Patent Office.

The Commissioner of Patents has forwarded to the Secretary of the Interior his report of the operations of the Patent Office for the past fiscal year, and his estimate of the amount necessary during the next fiscal year. The number of original patents issued during the first nine months of the present year was 13,084, an increase of 2,261 over last year. The receipts of the office for the same period were $65,447 in excess of those for the corresponding nine months of 1880. The report recommends a considerable increase in the examining corps and the clerical force of the office, and the following appropriations: $50,000 to carry out the abridgment of patents and the publication of 10,000 volumes of the same; $15,000 for reproducing burned and exhausted drawings; $10,000 for photo-lithographing drawings; and $9,000 to complete the *Official Gazette* for the present year.

American Society of Microscopists.

At the fourth annual meeting of this society, held at Columbus, Ohio, August 9, 10, and 11, 1881, the following officers were elected for the ensuing year, namely: President—Dr. George E. Blackham, Dunkirk, N. Y.; Vice-Presidents—Dr. Lester Curtis, Chicago. Ill., and Dr. Thad. S. Up De Graff, Elmira, N. Y.; Secretary, for three years—Prof. D. S. Kellicott, 119 Fourteenth street, Buffalo, N. Y.; Treasurer for three years—Geo. E. Fell, C.E., 162 Prospect avenue, Buffalo, N. Y.; Executive Committee—E. H. Griffith, A.M., Fairport, N. Y.; Dr. Robert Dayton, Cleveland, Ohio; Prof. Albert McCalla, Fairfield, Iowa. The next meeting will be at Elmira, N. Y., in August, 1882.

NEW METHOD OF ASSASSINATION.—A merchant of Santanda, Central America, was lately murdered by a new and ingenious use of dynamite. The charge was placed in the large lock of his store door, with the exploder arranged to be set off by the door key. He was instantly killed on attempting to unlock the door.