WHAT IS AN ARTIST?

In a recent lecture in this city, Dr. Seymour Haden, the eminent English etcher, gave a definition of art which is commendably more comprehensive than artists are apt to conceive. His view is so like that heretofore taken in this paper that we quote at length:

"An art and the principles of an art—what are they? The words are heard so often, they seem to come in at one ear and go out at the other. Yet I do not remember ever to have seen a definition of the word art which entirely satisfied me. The best way to arrive at a definition, perhaps, is to approach it, so to speak, from its negative side, and explain at least what art is not. Art is not manufacture. The French say *Arts et Metiers*, and we, Arts and Manufactures, using the words for the sake of the apposition. For all useful purposes the phrases are good; yet neither is correct. *Metier* means mastery, and may apply to art as well as to manufacture; manufacture means made by hand, and yet is constantly applied to works of the loom. Now, in what does art differ from manufacture? An art differs from a manufacture in this, that though it depends on material agents for its means of expression, yet those agents are of a simple kind, and are wholly directed by an impulse which has its seat and origin in the brain of the artist. Invest any of these simple agencies—the brush of the painter, the pencil of the designer, the needle of the etcher, the chisel of the sculptor, the knife of the surgeon, or the pen of the author, with any of the properties of the machine; render it in any way automatic, so as to place it in abeyance, and render unnecessary this brain impulse, and you will have as a result of their agency not an art, but a manufacture.

"A principle of an art, again, is that condition, or one of those conditions which by common consent are admitted to be necessary to its healthy existence, or, indeed, I may say, to its existence. Now, it follows that if this brain impulse is really at the bottom of art, the first principle of art is personality, originality, out of which come ideality, sensibility to external impressions, a sense of the beautiful, passion, poetry, and whatever else the mind of the artist is capable of. I do not say that all these attributes are necessary to the production of an ordinary artist; one may be a fair artist with one or two of them, and he must be a great genius who possesses them all. But one is absolutely essential—personality."

As far as he goes, Dr. Haden is right. But does he mean to limit the artist's agencies to the brush of the painter, the pencil of the designer, the chisel of the sculptor, the pen of the author, and the rest? We hardly think it. The tools of the goldsmith and of the silver (or white) smith have long since been admitted among the agencies of genuine art work. When the silversmith, having a noble purpose, puts himself—his personality, thought, feeling—in sufficient measure into his work, his art is justly called fine art. This being admitted of the whitesmith, who can deny it of the blacksmith? The fact that the blacksmith's aim is utility oftener than mere ornament only strengthens his position in the art world if his personality is fine and noble and is well expressed in the thing of iron his skillfully-wielded hammer has wrought out. All genuine art development has blossomed out of and around pure utilities. The right of the potter, the wood-worker, the weaver, and all other masterful workers (who put themselves into their work, and have in themselves something worth putting into work) to be ranked among artists depends upon themselves, and what they do, not upon the material they work upon or the tools they use.

On the other hand, many an æsthetic marble-cutter or brush-wielder, who thinks himself an artist in the highest sense because true painters and sculptors are, is after all no artist. His "art-work" is make-believe. It is mimicry, not the expression of creative brain-power, and not to be compared with the purposeful work of many whom he would call mere mechanics and manufacturers.

THE STAR OF BETHLEHEM.

The reappearance of the variable star poetically known as the Star of Bethlehem is among the possibilities of the present year; for unless astronomical calculations are in fault, this long-looked for star must flash forth from the sky-depths before the year 1885 has completed its course, and it may appear at any time, as its period, if it have one, is very near completion.

In the year 1572, Tycho Brahe, a Dutch astronomer, discovered a new star near Caph, in the constellation Cassiopea. It was of the first magnitude when first seen, increased rapidly in brilliancy, outshining Sirius, and soon equaling Venus, and was easily detected at noon-day by good observers. The color of the great star was at first of a dazzling white, then it changed to yellow, and finally became red. It shone brightly for nearly a month, then gradually faded, and in sixteen months disappeared from view.

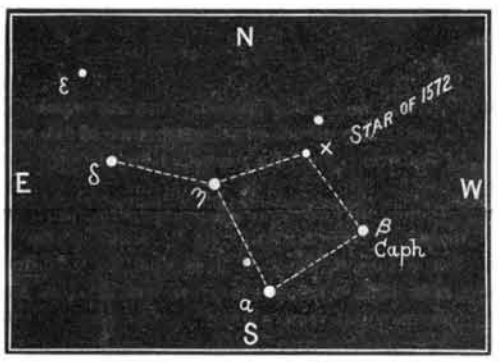
There were at the time a variety of opinions concerning the cause of this remarkable phenomenon. Some observers looked upon it as a fresh creation, a new comer in the universe. Other observers, and the larger portion, considered it as a sun on fire, a grand celestial conflagration, symbolizing the fate sure to overtake our sun and his retinue of worlds when the end of all things arrives. Astronomers were content with various speculations on the subject without coming to any definite conclusion, though it was the general opinion that the bright star in Cassiopea had fulfilled its mission, and would never again shine in the star-depths. A few stars with a similar history had been observed at long intervals, and these, as well as the brilliant new-comer, were included in a class known as new or temporary stars.

Forty years after the occurrence of this event, the telescope was invented. When it was turned to the position in the heavens occupied by the blazing star, a telescopic star was found within a minute of the identical spot which had been carefully mapped out by Tycho Brahe. This telescopic star is still found there, and is probably the same star that suddenly flamed forth in 1572.

The discovery that the famous star had not ceased to exist stimulated investigation. Astronomical annals were diligently searched, and it was found that similar bright stars were recorded as appearing in the same region of the sky in the years 945 and 1264. It is therefore inferred that the great new star of 1572 is a variable, with a period of a few more than three hundred years. If this theory prove true, we may soon hope to witness a repetition of this incomprehensible phenomenon. The last period was three hundred and eight years. The star was therefore due in 1880, and, if it appear at all, must dazzle our admiring eyes in the immediate future. By counting back three periods from the star's first recorded appearance in 945, we are brought to the near vicinity of the birth of Christ. Observers gifted with poetic fancies have not failed to connect the two events, and to infer that the Star in the East pointing to the place of the Nativity was the sudden outburst of this extraordinary star. Hence it has received the name of the Star of Bethlehem.

About twenty-four temporary stars have appeared from time to time in the last two thousand years. It is nearly certain that they all existed in the skies as very small stars before they blazed forth, and that, though apparently blotted out, they still exist there, ready to blaze forth again when the same conditions induce another conflagration. They are now classified as variable stars, though their long periods are of an incomprehensible and irregular character.

Thus there are variable stars of many varieties, from a well-behaved variable like Algol, that completes its regular changes in a period a little less than three days, to an erratic variable like the star in Cassiopea, that appears with a sudden outburst and then remains quiescent for centuries. In the case of the regular variables, it is easy to account for



the maximum and minimum light by the interposition of dark satellites, hiding a portion of the light as they pass between us and the star, or by the theory of sun spots, lessening at times the light of the star. Our sun is a variable star, and viewed from the nearest of the neighboring orbs probably shines as a yellow star of the third or fourth magnitude with a period of about eleven years, identical with the sun spot cycle. In the case of fitful variables, there is reason to believe that the sudden flames are due to outbursts of glowing hydrogen, resembling those of which the rosy protuberances around our sun give an illustration on a small scale.

If these outbursts are caused by eruptions of burning hydrogen, and if the protuberances around the sun are due to the same agent, the question naturally arises whether there may not be danger of similar outbursts from the solar surface. Such a catastrophe would doubtless involve the destruction of at least the higher forms of animal and vegetable life. Such a possibility exists, but the probability is too small to excite a moment's alarm. Only twenty-four blazing suns have been observed in two thousand years, while millions of stars have shone in the heavens, with a constant and serene light that has remained unchanged since men began to study these twinkling mysteries. The chances that the sun will blaze forth in the erratic style of the star of 1572, are therefore not more than one in a million, no greater than the probability that a huge comet will plunge headlong into the sun, or come into collision with the earth.

Observers will do well to keep an eye upon the constellation Cassiopea. Unscientific observers are as likely to be the first to detect the presence of the brightly beaming orb as those who possess special training for the work. If the long lost Star of Bethlehem return to its old position in the sky, it must return speedily, for every day increases the nearness of the advent. The year 1883 may, therefore, be made illustrious by a celestial visitor with a dozen comets, an event that would be almost as welcome to astronomers as the discovery of the cause of sun spots, or the accurate determination of the sun's distance.

Cassiopea is a constellation excellently situated for observation. It is on the opposite side of the pole from the Great Dipper, and at nearly the same distance. A line drawn through Megrim, one of the stars in the square of the Dipper, continued to the Polar Star, and extended to an equal distance beyond, will reach Caph, a star of the third magnitude in Cassiopea. This star with three others of about the same magnitude and a smaller one form the figure of an inverted chair. As in this latitude the constellation is always above the horizon, it can be seen at all hours of the night.

The diagram shows the principal stars of Cassiopea, and gives the relative position of those that form the chair. The point where the star of 1572 appeared is marked with a cross. Its right ascension is 0 h. 19 m., and its declination is 63° 24′ north. It is about 5° north northeast of Caph or Beta Cassiopeæ.

THE PAST YEAR IN THE PATENT OFFICE.

The annual report of the Commissioner of Patents for the year ending Dec. 31, 1882, shows that the balance in the Treasury on account of the Patent Fund was increased during the year from $1,880,119.32 to $2.205,471.10. The business done was largely in excess of that of the previous year and more than double that of 1866, as shown by the fees received and the number of patents issued, evidence enough of the rapid development of the service.

The total number of applications relating to patents was 31,522; of these 30,270 were for inventions, 948 for designs, and 304 for reissues. The number of caveats filed was 2,553; applications for registration of trade marks, 796; labels, 532; disclaimers filed, 20; appeals, 691; making in all 367,114 occasions for investigation and action. The number of patents granted and certificates issued was 20,518. Six thousand and ninety-nine patents expired during the year, and 1,791 were withheld for non-payment of final fee.

New York led in the number of patents received (3,779), and was followed at a long distance by Pennsylvania and Massachusetts, close together (1,843 and 1,815), and by Ohio and Illinois, also close together (1,466, and 1,422). New Jersey took out 835 patents, Connecticut 794, Michigan 637, Indiana 613, California 486, and Missouri 485. Wisconsin took 356, Iowa 348, Rhode Island 382, Maryland 372, and the rest smaller numbers. New Mexico took 8, the Army and Arizona 7 each, Idaho and Wyoming 4 each, and the Indian Territory brings up the rear with 3. Connecticut led in the ratio of patents to population (1 to 782), and was closely followed by Rhode Island (1 to 980) and Massachusetts (1 to 982). Excluding the District of Columbia, which is not representative, New York, ranks next with one patent to 1,345 people, and New Jersey next with 1 to 1,354.

Eleven hundred and thirty-five patents were issued to foreign inventors, England taking the lion's share, 399; Canada took 228, Germany 219, and France 129. Switzerland is credited with 35, Austria with 32, Italy with 20, Belgium with 11, Denmark, Sweden, and Russia with 10 each. The remaining few were widely scattered.

The Commissoner renews the annual appeal for more help, more room, and more money—needs which are plainly obvious everywhere except in Congress. The urgent necessity of carrying on the suspended work of making a classified abridgment of patents already issued is again insisted upon. In view of the fact that accumulated funds of the Office already exceed two million dollars, there can be no reasonable excuse for depriving the Office and the inventive public of the benefits of the much needed digest.

Improved Accumulating Batteries.

A great improvement has, it is said, been effected in accumulators by a combination of the Faure-Sellon-Volckmar patents. The Pullman train on the Brighton line, which formerly was lit by 18 incandescent lamps, supplied by 70 Faure accumulators, is now illuminated with 40 incandescent lamps, the current for which is supplied by 30 Faure-Sellon-Volckmar accumulators, the total weight of which is less than half those formerly employed.

According to Prof. Ayrton, the old accumulators weighed 130 pounds in working order, and gave a current equivalent to one horse power for three-quarters of an hour; whereas the new pattern weighs only about 75 pounds, and gives a horse power for an hour. The flannel or felt is now dispensed with, and the plates are so arranged now that a defective or imperfect one can be easily removed.

A New Fish and New Insects.

Several animals, new to science, were lately described to the Paris Academy. One is a strange fish brought up from a great depth off the Morocco coast; it is about a foot and a half long, and of deep black color; but its most striking feature is its very large and capacious mouth with elastic membranes, much resembling a pelican's. Probably, food is partly digested in this cavity. The fish (which M. Vaillant calls *Eurypharynx pelecanoides*) has very little power of locomotion. M. Brongniart described a new fossil insect of the order of Orthoptera from the coal formation of Commentry (Allier). Insects are rare in the Carboniferous strata; hitherto only 110 specimens have been obtained in the whole world. That now found is of remarkable size—about ten inches long, and the family of Phasmidæ, or "walking-stick insects," is that which comes nearest to it. M. Brongniart names it *Titanophasma fayoli* (M. Fayol sent it). The upper part of the thorax not being preserved, it is impossible to say whether the insect was winged. Once more, M. De Merejkowsky described a new class of infusoria, called Suctociliates, and forming a sort of connecting link between ciliates, which are characterized by small vibratory hairs, and acinetians, which have no such hairs, but have *suckers*.