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## A CENTENNIAL NUMBER.

In commemoration of the opening of the Centennial Ex position on the 10th of May, the next number of the Scien. tific American will appear in a new dress, and its pages will be devoted to illustrations of some of the various baildings, national, state, and those devoted to special industries, completed in Fairmount Park. In the sacceeding namber we shall presenta fall account of the opening ceremonies, together with illustrations thereof, and interesting descrip tions of matters and things connected with the event.
at the present time, beyond the brief report of progress which will be found in another column, it is an impossibility to afford any idea of the contents of the Exposition. Two sets of workmen, nambering many thousands, are working continuously, night and day, evolving order oat of a chaos which appears to be continually augmented by fresh contribations pouring in at the rate of hundreds of car loads daily. As soon as affairs ran smoothly, and the entries are in such condition as to admit of proper eramination, our readers may look for complete accounts of all mattars likely to prove of utility or interest.

## SILVER AND GOLD MONEY.

On Febraary 12, 1873, Congress passed an act by which the gold dollar was made the unit of value, the trade dollar of silver, weighing 420 grains, established, and silver money rendered no longer a legal tender for sams exceeding five dollars. The effect of this measure is, it is claimed, practically to demonetize silver, and a bill to amend it, by making silver a legal tender up to sums of $\$ 20$, is now before the Senate. The chief supporter of the amendment is Sena. tor Jones, of Nevada, who represents one of the greatest sil ver-producing districts in the world, and who has recently made an able speech in behalf of a silver currency. From a eview of the matations and quantities of the preciou that any diminution of the stock of specie, whether resulting from failure of mines or from arbitrary legislation, is fraugh from failure of mines or from arbitrary legislation, is fraught
with the greatest disasters that can befal society. England, said the Senator, by making gold the only standard of value, in 1816 was brought to serious financial straits, only relieved by he discovery of gold in California, and this, despite the fact that gold was a pecaliarly British product. By existing laws, he United States is committed to resamption in specie combined with a demonetization of silver, and Senator Jone believes this to be an impossibility, and that one or the othe course must be abandoned. As no one, save those committed to the inflation heresy, will dispate the necessity of earl resumption of specie payments, it follows that silver must be brought to the level of gold; and it is in support of this view that the Senator addresses a valuablearray of facts and figares, some of the more striking of which we quote below Fsom the discovery of America up to 1873, it is a remark able fact that the relative values of gold and silver, $15 \frac{1}{2}$ lbs. of silver being equivalent to 1 lb . of gold, have scarcely va ried, and it is probable that similar stability will be main tained in the fature. The reason is that the nature and qualities of the two metals are ao nearly alike that any im provement applicable to the axtraction or recovery of the one m ust be applicable to the other ; and further, their geological distribation is such that in many of the largest deposits they liein the same matrix. At the present time, the world's store of specie is one half silver; the estimated figares in 1872 were , to the value of $\$ 5,800,000,000$, and silver, $\$ 5,000,000$ 000 . As a matter of curiosity, we have calculated, roughly into a solid mass. The gold wonld form a cabe only 27 feet each dimension, and the silver, one of 177 feet. A mediom sized room, therefore, would hold all the gold in the world The gold supply is, however, diminishing; the river beds of Cae gold supply is, however, diminishing; the river beds of California and Australia, the Senator says, "have been
washed, the surface gold has been secured, the water line has been worked, and below it are only those sulpharets which as yet have not been successfully treated." The annual production in gold in 1801 aggregated $\$ 13,000,000$ a year, in $1829 \$ 5,000,000$, in $1852 \$ 182,000,000$, in 1875 $\$ 97,500,000$. This shows, not only a falling off, but great fuctuation in production; and, moreover, in 1875 British possessions contribated $\$ 60,000,000$ against $\$ 28$, present gold product is insufficient to meet the demands of the world for that metal in use in the arts, and to keep good the loss and wear of coin. On the other hand, in marked contrast to the above, the annaal sapplies of silver, essen tially an American product, have always been steady and are now bat little above the average. In 1805 the average o coin per capita, throughout the world, was $\$ 283$; in 1862 it
was $\$ 4.75$. Between these periods both the production and the per capita rate of coin have doabled; and this swelling of the measare of value lies in the increase of gold and no of silver. The production of the latter metal at the begin ning of the century was $\$ 35,000,000$; in 1875 it had reached bat $\$ 72,000,000$
Senator Jones points out that it is the stock of precious metals in the possession of the world that measures prices and as nearly one half of this stock is silver, to demonetize the latter would be to reduce all prices one half, and con vulse every country in the world except those which may refuse to take part in sach demonetization. Further more, heinsists that we never can resume speciepayments by gold alone. By continuing to exclude silver from equal participe tion with gold in the United States carrency, and attempting to resume specie payments, we occasion a demand, say of $350,000,000$, to pay off the greenbacks and furnish bank re-
عerves and $\$ 50,000,000$ of silver in serves and $\$ 50,000,000$ of silver in lieu of fractional notes.
The quantity of precious metal needed to maintain prices at The quantity of precious metal needed to maintain prices a
their present level in the occidental world is $\$ 4,000,000,000$ their present level in the occidental world is $\$ 4,000,000,000$
and of this, if the United States succeeds in resaming speci payments, it mast hold $\$ 350,000,000$ in gold. It is impossible for the country to obtain this by 1879, with the present production of gold only at $\$ 97,500,000$; more than half of this yearly yield is needed in the arts, and $1 t$ per cent o the occidental stock of gold, $\$ 2,600,000,000$, is needed fo Deduct these sums, and there is a sarplus of $\$ 10,000,000$ a year, whence to obtain our $\$ 350,000,000$, so that at least thirty-five years will be needed to amass the amount. Bu the increase of population will make an increased demand for gold exchanges and use in the arts, equal to at least
$\$ 6,000,000$ annually; and the annual gold product is, besides, diminishing. When these elements of the circulation are al moderately provided for, there will remain perhaps $\$ 500,000$ a year sarplus, and we shall be 700 years getting our $\$ 350,000,000$.

With these difficulties, the Senator contrasts the ease with which specie payments could be resumed on the basis of the double standard of gold and silver. The total coin in the world is $\$ 5,700,000,000$, and the annual sapply of both metal
to draw apon is $\$ 170,000,000$. Instead of having to draw apon the occident alone, we should draw apon the whole world. Three handred and fifty millions in gold forms one seventh of the entire stock of that metal; the same sam in both metals is less than one sixteenth. If a draft of one seventh would occasion a fall in prices of 15 per cent, a draft of less than one sisteenth would occasion a decline of less than 6 per cent; and while 15 per cent daring two and a half years-equal to 6 per cent per annum-would sweep away all and more than all the profits of industry, which on the whole do not net more than 3 or 4 per cent, 6 per cent in two and a half years-equal to $2 \frac{2}{5}$ per cent per annum-would enable us to get back to a sound measare of values without the loss of more than a very small portion of our industrial profits.

## LA GRANDE CHARTREUBE.

Although modern society has generally concluded that the asefulness of the monastic life has long since passed away, there are many precious legacies in art and literature, which, born and nartured in the cloisters of the middle ages, have descended to these times. When the outer world was given over to rapine, and the favorite amusement of men of wealth and high birth was highway robbery, it was surely a good hing that men desirous of cultivating the arts and sciences, and of keeping alight the sacred fiame of literature, should ind retreats which the wildest marauder respected, and which, moreover, were centers whence many streams of charity and benevolence took their course.
The ancient order of Carthasian monks was celebrated through many centuries. St. Brano and six of his disciples re. paired, about the year 1080, to the beantiful country watered by the Rhône and the Isère, in the soatheast of France, and there founded the monastery called La Grande Chartrease which is to this day the headquarters of the order. Another mportant organization occupied the site of the Charterhouse chools and asylum in London, the name of which is obviousI derived from the monastery. The worthy ecclesiastics are now, however, appaaring by their attorneys in our courts to defend their right to a trademark affired to the bottles of a cordial of great delicacy called "chartreuse," for the manuacture of which the monks are justly celebrated. Some base imitators in this city, it appears, have adopted the rademark, and, by foisting a home-made article on the mar ket, have brought discredit apon the old Carthusians. But Judge Shipman, after hearing argament in the case, at once directed an injanction to issae, and the bogas traffic will now be stopped.
It seems singular that so ancient and venerable a body should appear in the forefront of our modern civilization laiming its rights like any manufacturer or inventor of oar day. Mach of the art, learning, and literatare, so carefally ursed by the monks of bygone days, has passed away, and heir acience has long since gene, no one knows whither Their houses and lands are, even in Italy itself, given over o secular parposes, their numbers are reduced, and there is ittle left of many of their orders bat the names; bat there till remains in all its force, protected by the ægis of the United States Patent Office, their capability of producing potent liquids of exquisite flavor.

## WORRY AND ITS PHYSICAL EFFECTS

To so every-day and commona state of mind as worry, ranging, as it may, from a passing "fit of the blues" ap to the most poignant mental anxiety regarding life itself, little mportance is popularly attached; and especially among so xceptionally nervous and rapid people as the Americans, the act of a person succumbing under mental strain is of too ordinary occurrence to give rise to extended comment. To the list of the insane immared in asylums and brought thither through heredity or by their own excesses, thousands are added, suffering with broken minds induced by anxiety bat the great majority of people thas affected continue in their places in society, by no means lunatics, nor maniacs, nor idiots, bat nevertheless of brain ansound in parts. The world sometimes dubs them "eccentric;" and, if thes be distinguished, their odd habits, absence of mind, and like traits furnish rich material for the biographer; in other cases the eccentricities become crimes, and indiscriminating justice may declare the life forfeited because of the work. ings of hidden faculties, uncontrollable, because disorgan zed.
Worry, then, is dangerous, more so than the alcohol which kills the drunkard, for the latter involves a taste and a habit which may be pat aside; the former is the creature of ne cessity, and creeps insidiously into every man's life. Its physiological effects, therefore, should be clearly and adeaately realized. And the knowledge of the ille may, in some instance, prevent the existence of the canse.
During the early stages of dementia induced by mental nxiety, Dr. Richardson tells us in his " Diseases of Modern Life," there is nothing more than an increased tension of the minate vessels which supply the brain. In later stages, the substance of the nervous tissue itself undergoes a modifica. tion by which its activity is permanently lost. These are the physiological consequences, most briefiy summed up. The irst symptom is a want of full bodily vigor; then follows raving for more work, disturbed sleep, acate sensitiveness o external impressions, and, finally, strange figares and sounds are seen and heard. This condition may continue for years, and the sufferer in time may begin to accept abnormal creations as nataral. Dr. Richardson cites a case of a merchant, who for weeks retained in his vision the spectra of three lights, oval in shape, of the size of an egg, and so learly defined to the observer that he would watch them half consciously as they floated before him on the wall, the

