

benefit to society, for upon their skilful services depend the lives and happiness of the rest of mankind. "The farm servant, or daily labourer," says Lord Brougham, "whether in his master's employ, or tending the concerns of his own cottage, must derive great practical benefit, must be both a better servant and a more thrifty and therefore comfortable cottager, for knowing something of the nature of soils and manures, which chemistry teaches,—and something of the habits of animals and the qualities and growth of plants, which he learns from natural history and chemistry together. In truth, though a man is neither a mechanic nor a peasant, but only having a pot to boil, he is sure to learn from science lessons which will enable him to cook his morsel better, save his fuel, and both vary his dish and improve it. The art of good and cheap cooking is intimately connected with the principles of chemical philosophy, and has received much, and will receive more, improvement from their application." The art of making and stirring a fire, of washing and bleaching, of eradicating stains from cloth, are all conducted on philosophical principles; and those engaged in them would be more expeditious, safer and wiser operators, by such scientific knowledge as would be applicable to their operations.

How greatly has such knowledge elevated the condition of man, and how much higher might it elevate him. Compare the savage, as he roams in his native state through the interminable forests of our vast continent, with the descendants of the European living by his side; and behold what art and science have wrought, even in the ordinary avocations of life. The one lives upon the fruits of the chase, obtained by physical force; the other, confident in his knowledge of the laws of nature, in seed time and harvest, sows and reaps in abundance. The one lodges in his rude wigwam, or cave, or crawls into a hollow log; the other resides "the proud lord of his gorgeous mansion" or neat cottage, erected and furnished by the handy workmanship of a hundred artists, his table spread with the productions of all climes, borne across the mighty deep, and over continents, by the power of wind and steam. The bow and arrow and stone tomahawk are the rude implements of the chase and of warfare of the one; the other, skilful in the arts of peace as in those of war, has converted one portion of the earth, upon which he treads, into the musket, the cannon, and the glittering steel, and another into a combustible elastic powder, which, lighted by a spark, hurls the destructive thunderbolt. The one moves timidly along the beach in his bark canoe, propelled by his own feeble hand; the other launches fearlessly upon the broad ocean, in his proud man-of-war, driven by the winds of heaven, or the vapour of the very element through which he moves, neither tide nor tempest impeding his course. Guided by his faithful magnet, which neither slumbers nor sleeps, he safely traverses the trackless deep, through storms and midnight darkness. If he meets a homeward bound vessel upon the ocean, he tells with unerring accuracy his position on the globe, by a small glass formed of the sand which we carelessly tread beneath our

feet, and, with a few scratches of a pen, informs his distant wife and children and friends of the very spot upon which at that hour he floats. The one moves snail-like over the land, drawn by his dogs; the other flies with the velocity of the tempest, in his steam-driven car. The one strips the covering from the wild beast, and sews it with the thorn and the thong, to his own limbs; the other is clothed with the most exquisite skill, the workmanship of many artists. The one records and transmits his thoughts by the knots of the wampum; the other converts the dirty rag into beautiful paper, and stamps his thoughts imperishably and with lightning speed upon it, and hands them down to coming ages.

But why multiply instances. There is not more difference between the savage and civilized, than between the savage and the beast; and there is not more difference between the savage and civilized, than there might and *may* be between the civilized of the present and no distant day. Can any one suppose that we have attained perfection in the arts of life? Are there no more improvements to be made? Can we add nothing to what our ancestors have left us? Have they ascended all heights, descended all depths, and explored all space? Cannot we, by standing on the heads of our forefathers, see farther than they? If they have applied steam to the car, why may we not apply it to the plough? why may we not sow, and reap and thrash, by steam; nay, and clear away the forest by the same power? If they have applied steam to saw and plane, and fit the board for the building, why may we not apply it to quarry and cut the stone, to make and lay the brick, and plaster the wall? If they have applied steam to spinning and weaving the delicate fibre, why cannot we cut and sew the coat and shoe, the cloak and the gown, by the same process? Who can doubt vast improvements in all the arts of life, when he sees the success of machinery in forming the delicate pin and watch, the exquisite thread of the silk, the cotton, the linen, and the wool; and the weaving of every pattern, performed with more skill than by the mechanism of the hand? Who can suppose that we have reached the goal of human perfection, and crowded all the powers of nature into the service of man, when he sees him commanding the sun-beam to delineate the "human countenance divine," the lightnings of heaven to record his thoughts, the invisible galvanism to illumine his dwellings, the opaque flinty rock and drifting sand turned into transparent glass, calling down the stars of heaven and magnifying the teaming millions of a drop of water.

(To be continued.)

USEFUL AND INGENIOUS IMPLEMENT FOR MANUAL LABOUR.—It must have struck many of our practical readers, witnessing the rapidity with which mechanical operations are performed upon the soil by means of the horse hoe, the moulding plough, and other machinery, that hand labour, armed with few implements, anything, if at all, in advance of the old Dutch hoe, has been left far behind: Within the last few days, however, our attention has been called by the inventor, C. K. Sive-wright, Esq., of Cargilfield, Trinity, near this city, to a working model of an implement, manufactured under his direction, by our able agricultural engineer, Mr. Slight,