

that the small apparatus with which he works, and which affords him a useful and comfortable position in society, is the fruit of the most painful labors of certain men during half a century, and that it is the result of a series of facts which had first to be sought and discovered before that apparatus could be invented. The young generation thinks that all these things have always existed; and it never enters into its thoughts that what is now recognised as reasonable and useful was formerly disputed and regarded as inconsistent, erroneous, and bad.

The greater proportion of men have no idea of the difficulties that attended the labors by which the domain of science has been enriched. It may even be said that that innate disposition in a man to search out truth would not be sufficient in itself to cause him to surmount the obstacles which oppose themselves to the obtaining of every great result, if that disposition did not become in a few a powerful passion, which expands and increases their powers. All these labors are entered into without regard to profit in the individuals, and without a claim to gratitude. Those who accomplish them seldom live long enough to see their discoveries usefully applied. What they have labored for they cannot convert into money in the great market of life: it is merchandise that fetches no price—that can neither be ordered nor bought.

The most powerful action of science upon the lives and minds of men is so slow, so void of all noise, and so little apparent to the eye, that it is altogether impossible for a superficial observer to see how it works, or even that it works at all; but those who see the groundwork of things know that in our time progress in the world without science is impossible, and that the reproach of their not being generally useful ought to be addressed to the populations, and not to scientific men, who each in his way follows his aim, suffering nothing to lead him astray from it, and without thinking of the future utility of his labor either to himself or to one country only, but to the whole human species.

CROSSING SHORT-HORNS.

The power of a cross in a pedigree is determined by its position. Numerically, it can never, of course, be more or less than one; but relatively to its circumstances it may denote a half (which amount it cannot possibly exceed), or signify a fourth, or dwindle to an eighth, or shrink to the proportion of a sixteenth, a thirty-second, or a sixty-fourth, and so on; until though as palpably present and as large as ever to the sense of sight, it has become, as regards potentiality, a fraction too minute to be noticed in a calculation. There was a time when each cross constituted the entire half of the pedigree, and was precisely equal to all the rest. But

each cross has to give up a portion of its authority as another comes before it. It represents the half of a pedigree only so long as it is the nearest in order; and as it recedes by the superaddition of new crosses, the degree of its power diminishes according to a necessary arithmetical ratio. This is very important to bear in mind; for if it be true, as it unquestionably is—either a cross which was once objectionable may really be so no longer; or a cross which once possessed a commanding importance may have little individual value left (its situation being changed) beyond the association of consecrated name. A pedigree cannot be too exactly investigated and decomposed; but the whole of the pedigree depends not upon the particular worth of each party, abstracted from the rest, but upon the character of the whole as concrete. This character is ascertained by computation of quantities, of every one of which a separate and competent knowledge is supposed. In pursuance of a subject which has been frequently discussed, and in a variety of ways, in the columns of the *Messenger* during the last fifteen months, and which, we venture to conclude, is somewhat better understood by the majority of readers than it was fifteen months ago, we copy out a bull's pedigree, to consideration of which, and directly in reference to the foregoing remarks, we invite attention. The bull is nephew and half-brother to Mr. Langston's prize-winning bull Lord of the Harem (16,430), and is the property of a gentleman in the county of Westmoreland. The sires in the pedigree stand in the following order:

Duke of Buckingham (14,428);
Duke of Buckingham (14,428);
Grand Turk (12,369);
Fitz-Adolphus Fairfax (9124);
Sir Thomas Fairfax (5196);
Ambo (1636);
Memnon (2235);
Pilot (496);
Agamemnon (9);
Burrell's Bull of Burdon.

An eminent authority in short-horn matters alternately viewing this bull and his pedigree at length delivered himself of the following oracular observation—"Those Fairfax crosses spoil him." "Why?" was the reply. "Because there's a prejudice against them." Waiting any remarks upon the absurdly inconsequential answer to that most searching and often pugnacious adverb, "Why," and admitting, for the occasion (which we do not admit with the concurrence of our judgment) that the prejudice has a reasonable foundation, let us inquire into the actual proportion borne by the two repudiated crosses in the pedigree of the animal alluded to. The pedigree consists of ten crosses; seven of these crosses being Booth (for the earliest five crosses are now universal and not improperly accepted as such); one, half Booth and half Bates; the other two, Fairblood. The Fairfax crosses stand as prominent as ever, and count two as plainly as ever they did, but they don't stand for what they once represented; they are no longer the sigus they were.