

**LESSONS ON NUMBER, AS
GIVEN IN A PESTALOZZIAN
SCHOOL, CHEAM, SURREY.
THE MASTER'S MANUAL**

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Lessons on number, as given in a Pestalozzian school, Cheam, Surrey. The master's manual by C. Reiner

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C. REINER

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THE

MASTER'S MANUAL.

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P R E F A C E.

NUMBER presents a most important field, on which to develop and strengthen the minds of children. Its obvious connection with the circumstances surrounding them, — the simplicity of its data, — the clearness and certainty of its processes, — the neatness and indisputable correctness of its results, — adapt it in an eminent degree for early instruction. Arithmetical exercises tend to give clearness, activity, and tenacity to the mind; many an intellect that has not power enough for geometry, nor refinement enough for language, finds in them a department of study, on which it may labour with the invigorating consciousness of success.

But the advantages must of course depend, in a great measure, on the manner in which arithmetic is taught. More than any other branch of instruction has it suffered, in this country, from the influence of circumstances. The reproach, that we are a nation of shopkeepers, might seem to have originated in the spirit of our arithmetical studies. Most popular treatises on the subject degrade the science they profess to elucidate; it is made a mere shop-boy's assistant, the *vade-mecum* of the counter and the desk.

A certain mechanical dexterity in performing the operations of arithmetic, as required by the circumstances of commercial life, is effectually obtained by the use of these treatises; but the principles of the science are unknown, and many of its advantages, as presenting an exercise of mental power, altogether neglected.

Intelligent teachers, however, have not always been satisfied that their pupils should regard their mode of calculating as correct, or convenient, merely because it corresponded with the rule given in their book; they have explained the *rationale* of the process. The simple, lucid, and well-arranged treatise of Professor De Morgan, is among the happiest attempts to rescue arithmetic from its present degraded state, and to claim for it a place among other branches of rational education. It is peculiarly valuable for young persons, who, having been from their infancy led hood-winked through the dark alleys of arithmetical rules, desire to take an intellectual view of operations, which they have been taught to perform mechanically. It takes them, as it were, to an eminence, where they can see the point from which they started, and that at which they have

arrived, and, tracing all the windings of the dark passages which they were made to traverse, shows them that they were indeed the shortest, if not the best course they could have followed.

The aim of the little work now offered to the public, is different ; it does not propose to explain processes, but to unfold principles. The pupil is not taught to comprehend a rule, but to dispense with it, or form it for himself. The path along which he is led may be longer than the usual route, but then it is in broad daylight ; he is more independent of his guide, and derives more health and vigour from the exercise. Were the true ends of intellectual education more clearly apprehended, the means of prosecuting it would be more justly appreciated. While the question *cui bono ?* so judicious in itself, is answered by a sordid reference to mere money-getting, or by a