3 The mechanical and mental processes in the "two kinds," are the same. The difference between them being in meaning of results. in the one case "times" (repetition of unitgroup) being found; in the other case the value of (number of units in) the unit-group. But the results are correlatives; the one cantot be had without the other. 4. That the "divisor" and "dividend" may be both concrete, in which case the "quotient" is *abstract*. Or the divisor may be abstract and the dividend concrete—in which case the quotient is concrete.

5. That an utterly false "principle or law" of division cannot simplify fractional Arithmetic.

COMMON ERRORS IN PHYSICS.

THILE engaged in reading the candidates' papers returned at the various examinations, held by the Education Department during the last summer, many errors were so frequently met with that the Associate Examiners in Physics requested the writer, who had the honor of acting as their chairman, to prepare for publication an article indicating some of the points where students go wrong. It was thought that those who were asked to read the papers had, perhaps, some advantage over those left at home, or at their holiday resorts, and that such a statement might be of some use to all those teachers in our secondary schools to whom falls the subject of Physics.

It may not be amiss to remark that the Committee, nearly all of whom had acted for the two previous years, were of the opinion that the Primary papers were better than those of 1891 or 1892 : and that the Junior Leaving papers were decidedly ahead of those in the other two years. Indeed these candidates seemed very intelligently prepared, and were a credit to the schools attended by them. It was no uncommon thing to find a dozen candidates in succession take, on an

BY C. A. CHANT.

average, over 70 per cent. The work of the Senior Leaving candidates was more ragged and fragmentary. This may have been due to the fact that this was the first time such а paper had been set, and that many had to hastily prepare for it. The complaint was also made that the prescription of work was not very definite. But these reasons would not cover all the cases as, on inquiry of other sections, where such arguments would not hold, it was found that there was, pretty uniformly, a high rate of mortality.

It will be remembered that some of the questions called for the description of some experiment, and it is truly surprising what wonderful experiments were given in many instances. To prove that sound requires a medium to travel through, it was no uncommon answer to be told to pump all the air out of a room, and some were very anxious that the examiners should go into a room from which all the air had been exhausted, being assured that when there no sound would reach their ears. To prove that air would expand without applying heat, one would take a balloon to the top of a high mountain : he knew he would