THE CENTURY'S PROGRESS IN APPLIED MATH-EMATICS.

BY PRESIDENT R. S. WOODWARD.

THE honor of election to the presidency of the AMERICAN MATHEMATICAL SOCIETY carries with it the difficult duty of preparing an address, which may be at once interesting and instructive to a majority of the membership, and which may indicate at the same time the lines along which progress may be expected in one or more branches of our favorite science. In partial recognition of the honor you have conferred upon me it has seemed that I could do no better than to consider with you some of the principal advances that have been made in mathematical science during the past century. But here at the outset one must needs feel sharply restricted by the limitations of his knowledge and by the wide extent of the domain to be surveyed. Especially must this be the case with one who belongs to no school of mathematicians unless it be the 'old school' of inadequate opportunities and desultory training. On account of these conditions, I have found it essential to accept the ordinary division of the science into pure and applied mathematics and to confine my attention in this address wholly to applied mathematics. Here again, however, it is necessary to impose restrictions, for the domain thus divided is still far too large to be reviewed adequately in the brief interval allotted to the present occasion. I have therefore limited my considerations chiefly to those branches of applied mathematics which were already recognized as such at the beginning of the present century. The most important of these branches appear to be analytical mechanics, geodesy, dynamical astronomy, spherical or observational astronomy, the theory of elasticity, and hydromechanics. This rather arbitrary subdivision may be made to include several important branches not enumerated, while it must exclude others of equal or greater importance. Thus the theory of heat diffusion which led Fourier to the wonderful analysis which bears his name may be alluded to under physical geodesy ; the theories of sound and light may be regarded as applications merely of the theories of elasticity and hy-