

of mathematicians would be out of place here. Yet, such illustrations would be esteemed by many the most valuable part of the argument. I have therefore to ask you generously to recognize that the case can be made much stronger, not only if the speaker be changed, but also if he be granted a different audience.

The error of our critics arises from their taking a narrow view of culture, and from imagining that a kind of antithesis exists between culture and discipline. Culture includes discipline; discipline is a part of culture—possibly its most important part. Discipline concerns itself with the moral part of our nature, and with the higher part of our intellectual being, and hence the somewhat stern associations surrounding the word Culture and discipline may even be regarded as co-extensive, in which case discipline suggests thoroughness, depth, scientific method. Hence the word discipline lends itself especially to those subjects that are capable of a thorough, profound and scientific treatment. There is a part of culture, usually regarded as outside of discipline, which occupies itself with our æsthetic faculties, with our perception and appreciation of beauty; but even with this, as I shall shew, mathematics has to do.

My position is that not only does mathematics supply culture in the broadest and deepest sense of the word, but that even in the narrowest application of that much abused word "culture," our subject is not found wanting. My plea for culture as being resident in mathematical studies really applies to all science.

My claim is that all science not only disciplines the faculties but also cultivates the sense of beauty—the æsthetic faculties—provided always, of course, that science is properly presented.

I have no sympathy with the crude and narrow view of culture that sees it only in the study of poetry, and of the lighter forms of literature (without philosophy or science), or sees it only in the painter's or sculptor's arts, in architecture or in music. Our University, every university, is a protest against so circumscribed a view. It is not a little remarkable that men can be found who say that a science which deals with the most positive kind of knowledge is to be viewed merely as a discipline, but that *belles lettres* which may deal in things most fanciful and