

VII.—*A Century of Progress in Acoustics:—Presidential Address
to Section.*

By PRESIDENT J. LOUDON, LL.D.

(Read May 23, 1901.)

In selecting the Progress of Acoustics, on its experimental side, as the subject for this year's Presidential Address, I am fully alive to the fact that this branch of science has been comparatively neglected by physicists for many years, and that consequently I cannot hope to arouse the interest which the choice of a more popular subject might command. It is, however, just because of this neglect of an important field of science that I conceive it to be my duty to direct some attention thereto. This duty I can best perform, it seems to me, by taking a survey of the work accomplished in this particular field during the century that has just closed. Such a survey will make it evident not only that the science of acoustics has made immense progress during that time, but also that many of the experimental methods in use in other branches of physical science were invented and first employed in the course of acoustical research. This latter fact, though not generally recognized, furnishes an illustration of the interdependence which exists between the various branches of physical science, and suggests the probability that the work of acoustical research in the future may be advanced by experimental methods specially designed for investigation in other fields. A revival will, of course, come in time for acoustics, as it has recently come for electricity, and it ought to come all the sooner because of the co-operation which physicists may naturally look for from those who are cultivating the new fields of experimental psychology.

In order to avoid the tedium of a bare enumeration of discoveries arranged chronologically, I propose to refer, in the first instance, to the invention of the various experimental methods which have been employed in acoustical research. A separate reference to these methods will enable us to appreciate their potency in the advancement of this science.

The earliest of these methods is due to Chladni whose work "*Die Akustik*" appeared in the form of a French translation in 1809 under the title "*Traité d'Acoustique de Chladni*". In this work were collected all the researches on the vibrations of bodies which Chladni had conducted with the aid of the new method (*méthode de sable*.) This method consists in distinguishing, on the surfaces of vibrating bodies,