

Dickinson College Archives & Special Collections

<http://archives.dickinson.edu/>

Documents Online

Title: "Chladni," by Jennie M. Taylor

Format: Commencement Oration

Date: June 27, 1889

Location: Orations-1889-T238c

Contact:

Archives & Special Collections
Waidner-Spahr Library
Dickinson College
P.O. Box 1773
Carlisle, PA 17013

717-245-1399

archives@dickinson.edu

Chladni.

Nearly a century and a half has passed since there was born in the city of Wittenberg, the greatest acoustician the world has ever known. Ernst Florens Friedrich Chladni was the "Pioneer of Acoustics" being the first to raise it to an independent science. Hitherto it had not been separated from music. Pythagoras and Aristotle had regarded it in that way. These wise men had studied

Chladni.

2.
Jimmie Taylor.

they subject sufficiently to know how sound was propagated in the air. Farther than this they did not go. They could not make a science of it.

Bacon and Galileo first laid the foundation of the science. Newton placed the corner stone when he showed that the propagation of sound depends upon the elasticity of the conducting medium. Chladni spent the best years of his life on the superstructure of the science. It is still incomplete. No one has been found worthy

Chladni.

Jennie Taylor^{3.}

to finish the building,
although several have
appeared and each
added his stone or
repolished those placed
there by Chladni.

The plan of operation
adopted by our scientist
was an interesting one
and so well adapted
to the subject under
investigation that it
has never been supplanted.

The laboratory students
of to-day still use the
glass or metallic plate
clamped firmly in the
middle and bowed at
the edge or fastened at
the edge and bowed
through a circular opening
made in the center.

Chladni

Jennie Taylor.

As, in the days of
Chladni they yet sprinkle
sand or lycopodium
on the plate and watch
it as it joyfully dances
up and down to the
sound of the music,
gradually arranging itself
along the lines prescribed
by Nature, yielding gracefully
to fate without a murmur.
Yet some, like naughty
children, try how far they
can venture without
obeying, follow the
letter of the law rather
than the spirit. Sometimes
the order goes forth
that companies be formed;
then the proper officers
repeat the order and
as they do so their voices

Chladni,

^{5.}
Jennie Taylor

blend together, forming
the most beautiful
system of "harmonics"
that could be imagined.
The fundamental note
in the chorus is that
of the higher officer, while
the others harmonize so
perfectly with it that
their presence would
never be suspected did
we not immediately see
the soldiers of band
take their places as
commanded. The effect
is wonderful, in form
most exquisite, in sound
most enchanting. No wonder
the study was fascinating;
in addition to its appeal
to the intellect, requiring
the deepest and most

Chladni, Jennie Taylor.

profound thought, it engaged both the aesthetic senses, entrancing them with the beautiful figures constructed and the rich, full tones produced.

Chladni not only became interested in the study himself but engaged the attention of others in it, making "Acoustics" the subject of a series of popular lectures which he delivered in France, Germany, Holland, Russia, Italy and Denmark. In the meantime he was preparing to hand his work down to posterity in the shape of "Lectures concerning the Theory of

Chladni

⁷²
Jemnie Taylor.

Sound, "New Contributions
to Acoustics", "Contributions
to Practical Acoustics,
with remarks on the
making of instruments"
and "Acoustics."

He died in 1827
after a long and
useful life.

Commencement Oration of Jennie Taylor, Class of 1889

Transcribed by ?????, ????

Edited by Don Sailer, November 2009

Chladni.

Nearly a century and a half passed since there was born in the city of Wittenberg, the greatest acoustician the world has ever known. Ernst Florens Fredrick Chladni was the “Founder of Acoustics” being the first to raise it to an independent science. Hitherto it had not been separated from music. Pythagoras and Aristotle had regarded it in that way. These wise men had studied

the subject sufficiently to know how sound was propagated in the air. Farther than this they did not go. They could not mold a science of it.

Bacon and Galileo first laid the foundation of the science. Newton placed the corner stone when he showed that the propagation of sound depends upon the elasticity of the conducting medium. Chladni spent the best years of his life on the superstructure of the science. It is still incomplete. No one has been found worthy

to finish the building, although several have appeared and each added his stone or repolished those placed there by Chladni.

The plan of operation adopted by our scientist was an interesting one and so well adapted to the subject under investigation that it has never been supplanted.

The laboratory students of to-day still use the glass or metallic plate clamped firmly in the middle and bowed at the edge or fastened at the edge and bowed through a circular opening made in the center.

As in the days of Chladni they yet sprinkle sand or lycopodine on the plate and watch it as it joyfully dances up and down to the sound of the music, gradually arranging itself along the lines foreordained by Nature, yielding gracefully to fate without a murmur. Yet some, like naughty children, try how far they can venture without disobeying, - follow the letter of the law rather than the spirit. Sometimes the order goes forth that companies be formed; then the under officers repeat the order and as they do so their voices

blend together, forming the most beautiful system of “harmonics” that could be imagined. The “fundamental note” in the chorus is that of the higher officer, while the other harmonize so perfectly with it that their presence would never be suspected did we not immediately see the soldiers of sand take their places as commanded. The effect is wonderful, in form most exquisite, in sound most enchanting. No wonder the study was fascinating; in addition to its appeal to the intellect, requiring the deepest and most

profound thought, it engaged both the aesthetic senses, entrancing them with the beautiful figures constructed and the rich, full tones produced.

Chladni not only became interested in the study himself but engaged the attention of others in it, making “Acoustics” the subject of a series of popular lectures which he delivered in France, Germany, Holland, Russia, Italy and Denmark. In the meantime he was preparing to hand his work down to posterity in the shape of “Discoveries concerning the Theory of

Sound”, “New Contributions to Acoustics”, “Contributions to Practical Acoustics, with remarks on the making of instruments” and “Acoustics.”

He died in 1827 after a long and useful life.