

erties of these gases were determined, which are given in the following table :

	Helium.	Neon.	Argon.	Krypton	Xenon.
Refractivities (Air 1).....	0.1238	0.2345	0.968	1.449	2.364
Densities of gases (O=16).....	1.98	9.97	19.96	40.88	64
Boiling points at 760 mm	?	?	86.9° abs.	121.33° abs.	163.9° abs.
Critical temperatures.....	?	Below 68° abs.	155.6° abs.	210.5° abs.	287.7° abs.
Critical pressures....	?	?	40.2 m.	41.24 m.	43.5 meters.
Vapor-pressure ratio	?	?	0.0350	0.0467	0.0675
Weight of 1 cc. of liquid.	?	?	1.212 gms.	2.155 gms.	3.52 gms.
Molecular volume....	?	?	32.92	37.84	36.40

In the vacuum tube neon is extremely brilliant and of an orange-pink hue, and is characterized by multitude of intense orange and yellow lines; krypton is pale violet, and xenon is sky-blue.

The five elements clearly form a series in the periodic table, between the seventh and the first groups, that is, as a transition from the most negative to the most positive group. This is of the greatest interest, since in two recently published papers Ladenburg has given the atomic weight of krypton as about 59, placing the element between nickel and copper. It could thus find no place in the periodic table, as it is now understood. On the other hand, as determined by Ramsay and Travers, the elements find a natural place in the eighth group, as a transition from the negative series of the seventh group to the positive series of the first group.

J. L. H.

THE RESIGNATION OF PRESIDENT MENDENHALL.

MEN of science everywhere will learn with deep regret that Dr. Thomas C. Mendenhall has been compelled by ill health to resign the presidency of the Worcester Polytechnic Institute. Fortunately President Mendenhall's health has only been injured by the great amount and responsible character of the work he has undertaken, and there is every reason to believe that after rest in Europe he will return prepared to continue work as important as that which he has already accomplished at the Ohio

State University, the Imperial University of Japan, the U. S. Signal Service, the Rose Polytechnic Institute, the U. S. Coast and Geodetic Survey and the Worcester Polytechnic Institute. It is known to all men of science that, while occupying executive positions of great responsibility, President Mendenhall has carried out scientific researches of the utmost importance, and has taken an active part in all movements for the advancement and diffusion of science in the United States. He is one of the most efficient members of the National Academy of Sciences and of the American Association for the Advancement of Science, of which he has been president. He is now president of the American Metrological Society, chairman of the Massachusetts Highway Commission and a leader in many important scientific movements. As one of the editors of this journal since its reorganization six years ago his services have been invaluable. The grounds of President Mendenhall's resignation, the reluctance with which it was accepted and the great value of his work at the Worcester Polytechnic Institute is shown by the following letters. The letter of resignation, dated October 15, 1900, is as follows :

Hon. Stephen Salisbury,

President, Board of Trustees.

Worcester Polytechnic Institute :

Dear Sir :

I hereby tender my resignation as president of the Worcester Polytechnic Institute, to take effect on the first of July next.

I send this communication so long in advance in order to afford ample time for the selection of a suitable person to fill my place, and I hope I may be allowed to add a few words in acknowledgment of the continued and unvarying kindness which the board of trustees have shown me during my connection with the institute.

As far as I can now remember every suggestion I have made relating to the management of the institute has been approved by the board and every plan for its betterment that I have submitted has received its cordial, unanimous and hearty support. My personal relations with the members of the board have been, without exception, agreeable; everything that they could do to make my administration successful and my life in Worcester pleasant has been done, and I cannot give measure, however much I might multiply words, to the feelings of appreciation and grati-

tude with which I must always regard their considerate treatment of me during my term of service.

Naturally it is with great regret that I look forward to the early breaking off of a relation which has been to me so satisfactory. During the past year the condition of my health has been such as to cause much anxiety and this has been increasingly so during the past few months. The conclusion has been forced upon me that I must indulge myself in a long vacation or period of rest as free as may be from care and responsibility, too long to be for a moment considered compatible with a continuance of my connection with the institute. While thus compelled to sever this connection, there is no small consolation in the fact that I leave the institution at a period which may fairly be called the most prosperous in its history. Its numerical strength has not before been equalled; its next graduating class will be larger than any that has preceded it; its material equipment in the way of apparatus, machinery and other appliances for instruction has been greatly increased during the last few years and is now as nearly adequate as that of the best institutions of its class; during the same time new departments have been developed and specialization has increased; its internal affairs are directed by a relatively large, able and harmonious corps of instructors, and it is everywhere admitted to be in the front rank of the engineering schools of the country. Whatever progress towards this end has taken place during my administration, I wish to attribute to the generous support of the board of trustees, the cordial and enthusiastic cooperation of the faculty, the earnest and conscientious devotion to work which is and, I think, always has been characteristic of the student body, and, finally, the growing interest of the alumni, now nearly a thousand in number, scattered over the civilized world. The latter has been specially manifest on the organization of a number of new and active Alumni Associations, one of which is now to be found in almost every city of the first importance.

Under the continued fostering care of those who have so generously and unselfishly supported it in the past and with any one whom the board of trustees may select at its head, I shall confidently expect it to maintain its rank among the leading exponents of technical education.

I need hardly say that it will ever be a pleasure to me to further its interests in any way in my power.

I am yours faithfully,

T. C. MENDENHALL.

On December 20th in reply, the following communication was sent to Dr. Mendenhall by

the committee on the part of the board of trustees:—

President T. C. Mendenhall, Ph.D., LL.D., Worcester Polytechnic Institute:—

Dear Dr. Mendenhall:

Your letter of October 15, 1900, resigning your office as president of the Worcester Polytechnic Institute, has been received by the trustees with expressions of profound surprise and regret. They deeply deplore the cause which alone necessitates this action on your part. They have been very slow and unwilling to admit the fact. In conference with you and at repeated meetings of the board, they have earnestly sought to find some way by which such a serious loss as your permanent separation from the institute might be averted. They are, however, compelled to recognize that your reasons leave them no option, either as respects your interests or those of the institute, and they therefore reluctantly accept your resignation as president of the institute to take effect, as you request, July 1, 1901.

In thus regretfully acceding to your request, the trustees wish to thank you for your thoughtful consideration of the welfare of the institute in giving them timely notice of your decision, and for the most courteous terms in which you have made it known to them. They also desire to communicate to you and to place on record their high and grateful appreciation of your laborious, devoted and successful service for the institute. During your administration, which in July will cover seven years, the institute has steadily grown in its productive endowment; in the size and value of its plant; in the excellence of all its facilities; and in the number of its faculty, instructors and students. New buildings have been erected and equipped. Large additions have been made to machinery and apparatus. The courses of study have been extended, revised and brought to the highest standards. The success, high rank and deserved fame of the institute have been greatly and solidly increased. All this has, in large measure, been due to your wisdom, faithfulness, tact and unwearying courtesy as president.

Nor would the trustees fail most cordially and thankfully to recognize the distinction which your ability as a scientific man, your skill and charm as a lecturer, and your ready, valuable and public spirited service of the city and the commonwealth, have given to the institute. In all these and similar directions your departure from among us will leave a vacancy not easy to fill. This adds to the pain with which, not only the institute, but also the city and the state, will lament your forced retirement on account of impaired health.

The trustees assure you that they fully reciprocate your expressions of personal esteem and of gratitude for the most amicable relations which have always existed between them and you. They earnestly hope that the rest and relief from responsibility to which you look forward will speedily result in your complete restoration to health and in fitness for increased usefulness and happiness, and to this end their good wishes will always follow you.

We remain, dear Mr. Mendenhall, on behalf of the trustees and with high regard, faithfully yours,

STEPHEN SALISBURY,
DANIEL MERRIMAN,
C. G. WASHBURN,
Committee of Trustees.

THOMAS A. WILLIAMS.

WE learn with much regret of the death of Professor Thomas A. Williams, assistant-chief of the Division of Agrostronomy, U. S. Department of Agriculture, and a well known authority on botany and agriculture. He died at his home, near Washington, on December 23d, at the early age of thirty-five years. The high esteem in which Professor Williams was held by his colleagues is expressed in the following resolutions:

It is with feelings of profound sorrow and regret that we, the employees of the Department of Agriculture, learn that death has removed from among us our beloved companion and co-worker, Thomas A. Williams, a classmate and intimate associate of many of our number. His broad knowledge of scientific matters, his keen appreciation of nature, his kind and forbearing disposition has endeared him to all. He was known to his associates as an indefatigable worker and investigator.

Resolved, That in the death of Professor Thomas A. Williams, science and agriculture have suffered a great loss, and we, his associates, a dear friend, whose self-forgetfulness in his kindly consideration for the feelings of others, and uniform cheerfulness, often under conditions of severe physical suffering, revealed a lovable character of the highest Christian type. The loss to the Division of Agrostronomy is irreparable. In the performance of his official duties he had proved himself an excellent executive and an organizer of unusual merit and his relations with his associates in office were always such as to command the highest esteem and respect. He never shirked a duty, and however difficult the undertaking, the work performed by him was done most creditably. His loss will be felt most keenly by his associates in the di-

vision, and his memory will remain with them as one whose exemplary life and steadfastness of purpose they should strive to emulate.

Resolved further, That we tender to his bereaved family our heartfelt sympathy in their great loss and invoke for them the blessing of the Heavenly Father, who alone can heal the broken heart and give lasting comfort.

Resolved, That copies of these resolutions be sent to the family of the deceased and to the various daily and scientific journals.

COMMITTEE ON RESOLUTIONS FOR THE
DEPARTMENT OF AGRICULTURE.

WASHINGTON BIOLOGISTS' FIELD CLUB.

WASHINGTON, D. C., December 27, 1900.

Whereas, We have learned with sorrow and a sense of deep personal loss of the sudden death of our fellow-member, Thomas A. Williams.

Resolved, That the Standing Committee of the Washington Biologists' Field Club voices the feeling of every member in paying tribute to the memory of Mr. Williams, whose gentle and kindly disposition, charming good-fellowship and sterling qualities endeared him to every one of us. We recall with pleasant remembrances his interest in the work of the Club and its social relationships, as well as the many delightful hours spent with him in the field. We extend our heartfelt sympathy to Mrs. Williams in this the hour of her great bereavement, which we hope may be lightened by the thought that he passed away in the same peaceful and tranquil spirit in which he had lived.

Resolved, That a copy of this tribute be sent to the family of the deceased, and that it be published in *The Plant World*, of which he was an editor, and in *SCIENCE*.

By direction Standing Committee,
Washington Biologists' Field Club,
CHARLES LOUIS POLLARD,
Chairman.

THE AMERICAN SOCIETY OF NATURALISTS.

THE Society met at Johns Hopkins University, Baltimore, on the 27th and 28th of December. In addition to serving as a center for the important affiliated societies devoted to the natural sciences, the Society as usual had what may be regarded as two scientific sessions. The address of the president, Professor E. B. Wilson, printed above, was given at the annual banquet on Friday evening, and on Thursday afternoon a discussion, which will also be printed in this Journal, took place, its