

Time.....	1 min.	3 min.	8 min.	10 min.
Temperature	39.25	38.20	34.30	33.0° C.
Dia. pupil.....	0.13	0.17	0.34	0.425 in.

After removal of the adrenals and before adrenal insufficiency had time to develop, induction shocks, asphyxia and cold produced little or no effect in the same animals which had previously given good responses with the same stimulation.

Our evidence points conclusively to an emergency function of the adrenal.

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SEALING QUARTZ TO GLASS WITH SILVER CHLORIDE

ALTHOUGH silver chloride has long been used as a cement, the possibility of employing it as a cement for vacuum purposes has perhaps not been thoroughly appreciated. Recent tests have demonstrated that the substance possesses certain qualities desirable in a cement, namely, it melts at 455° C, a relatively high temperature, it adheres to glass and quartz surfaces and forms a joint that does not leak, it does not give off gas in any quantity, and does not decompose readily with time. By means of the silver chloride quartz windows were sealed to glass mercury vapor lamps and gas discharge tubes for use as sources of ultra-violet light.

The silver chloride was prepared by precipitation from an aqueous solution of silver nitrate with sodium chloride. The precipitate was thoroughly washed, dried, and ground to a powder. To fasten a plate of quartz or other material to a glass tube the following simple manipulation was found workable. The end of the glass tube was ground evenly, warmed above 500°C in a bunsen flame and dipped quickly into the silver chloride powder. This adhered to the glass and upon further heating in the flame melted evenly around the end of the tube. The tube was then clamped in an upright position and the plate laid on the top of it. The bunsen flame was carefully played over the tube and the plate until the silver chloride again melted and crawled into optical contact with the plate. Little difficulty

was experienced in sealing fused quartz plates to glass tubes, but with plates cut from crystal quartz considerable care was necessary to heat them to the required temperature without fracture. Slow even heating by a furnace would have been better than the bunsen flame. It was found that if the glass tube was either too thin or too thick it was liable to crack near the seal upon cooling. Glass tubing of medium thickness stood the strain well. Of course in such a seal strains exist because of the different heat expansions of quartz and glass, but the fused silver chloride, being tough and not brittle, no doubt yields somewhat and eases the strain.

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THE NORTH CAROLINA ACADEMY OF SCIENCE

THE North Carolina Academy of Science met at the University of North Carolina at Chapel Hill May 5 and 6. Thirty-five new members were added, making a total of 163. The North Carolina Section of the American Chemical Society and the North Carolina Physics Teachers' Association met at the same time and place. The following officers were elected: (Academy) *President*, Dr. A. Henderson, University; *vice-president*, Dr. H. B. Arbuckle, Davidson College; *secretary-treasurer*, Dr. Bert Cunningham, Trinity College; *executive committee*, Dr. H. N. Gould, Wake Forest College, Professor J. P. Givler, North Carolina College for Women, Dr. B. W. Wells, State College. (Chemists) *President*, Dr. A. S. Wheeler, University; *secretary*, Mr. L. B. Rhodes, Raleigh. (Physics Association) *President*, Dr. A. H. Patterson, University; *vice-president*, W. T. Wright, North Carolina College for Women; *secretary-treasurer*, Professor A. L. Hook, Elon College; *executive committee*, Professors C. W. Edwards, J. B. Derieux and A. F. Roller.

In addition to the address of welcome by President Chase of the university and the presidential address, "The search for the ultimate atom," by Professor J. L. Lake of Wake Forest, the following papers were presented:

The variation of the photoelectric current with thickness of metal: OTTO STUELMAN, JR.

Studies on fermentation of rare sugars by plant pathogenic bacteria: F. A. WOLF.

Pod and stem blight of soy beans: S. G. LEHMAN.

The dipterous galls of the hickories: B. W. WELLS.

The stems of grape hybrids: C. F. WILLIAMS.

Instincts in social life (By title): C. C. TAYLOR.

Wild ferns and flowers of Chapel Hill: H. R. TOTTEN.

Coordinate systems in mathematics (By title): J. W. LASLEY, JR.

The calcium content of mixed feeds in relation to the feeding requirements of animals: J. O. HALVERSON and L. M. NIXON.

Influence of climate on protein content of corn: H. B. ARBUCKLE.

A note on the pulmonary circulation in vertebrates: W. C. GEORGE.

The polymorphic genus clavaria: W. C. COKER.

The geology of the Muscle Shoals area: W. F. PROUTY.

Dormancy in the seeds of Diospyros Virginiana: H. L. BLOOMQUIST.

A "nature-experiment" on the development of frogs and one on the physiology of sponges: H. V. WILSON.

Notes on the reproduction of hydra in the Chapel Hill region: H. S. EVERETT. Presented by H. V. Wilson.

Twenty years of the North Carolina Academy of Science: C. S. BRIMLEY.

Notes on protozoa: BERT CUNNINGHAM.

A review of the fulgoridæ of eastern North America: Z. P. METCALF.

Striations in inorganic solutions: C. M. HECK.

A parasite of the Mediterranean flour moth: J. E. ECKERT.

Spore discharge in some genera of water molds: J. N. COUCH.

Laboratory work in elementary genetics: C. O. EDDY.

The Echigo oil fields, Japan: COLLIER COBB.

Age of the Talladega and associated rocks of Clay County, Alabama: W. F. PROUTY.

Acoustics of auditoriums: A. H. PATTERSON.

A review of high school science teaching: J. N. COUCH.

Sand dunes of Niigata: COLLIER COBB.

The structure and development of the seed coats of garden peas and sweet clover: L. E. YOCUM.

Some intestinal cestode and nematode parasites of cats of Wake Forest: R. B. WILSON.

A new species of isoachlya: F. A. GRANT.

Some investigations into the bacteriology of

common colds and a brief trial of autogenous vaccine therapy for six months at Wake Forest College: W. L. TAYLOR and CHAS. PHILLIPS.

The relation of chemistry to the state's public water supply: C. F. CATLET.

New dyes derived from 5-chloro-2-amino-p-cymene: A. S. WHEELER and I. V. GILES.

CHEMISTRY SECTION

Zirconium ferrocyanide: F. P. VENABLE and R. A. LINEBERRY.

Zirconium citrate: F. P. VENABLE and E. C. MOEHLMANN.

Modification of the official sodium method: J. O. HALVERSON, L. E. MORGAN and J. H. SCHULTZ.

The determination of potassium in the official sodium method: J. O. HALVERSON and J. A. SCHULTZ.

A modified thermoregulator: M. L. HAMLIN.

A convenient form of condenser: M. L. HAMLIN.

Phenolsuphonphthalein and some of its derivatives: W. N. ORNDORFF and F. W. SHERWOOD.

Binary systems of metanitrotoluene and another mononitrotoluene: J. M. BELL and J. L. McEWEN.

The nitration of certain nitrotoluenes: J. M. BELL and W. B. SMOOT.

The nitration of orthonitrotoluene: J. M. BELL and H. G. PICKETT.

The chlorination of 2-amino-p-cymene: A. S. WHEELER and I. V. GILES.

New derivatives of 2-bromo-5-hydroxy-1, 4-naphthoquinone: A. S. WHEELER and B. NAIMAN.

The effects of tops on the wilting of succulent vegetables: L. B. RHODES.

The determination of the solubility of nickel sulphate by floating equilibrium: F. C. VILBRANDT and J. A. BENDER.

PHYSICS SECTION

How the Einstein theory of relativity was verified: A. HENDERSON.

X-ray spectra from crystals: J. B. DERIEUX.

Effect of an electric field upon colloids in non-conducting liquids: N. B. FOSTER.

Analysis of crystal structure from X-ray spectra: A. A. DIXON.

The color of metals by transmission: OTTO STUHLMAN, JR.

Some suggestions for the teaching of physics: A. H. PATTERSON.

The use of an audion tube as negative resistance: D. A. WELLS.

Research in North Carolina: (By title) C. W. EDWARDS.

BERT CUNNINGHAM,
Secretary