

The experiments, outlined only in part in this note, lead to a theory of emulsion which is more comprehensive than has been developed heretofore, and this will be presented in connection with a series of papers which will include measurements on cataphoresis, on surface energy and on other factors of importance in this connection.

WILLIAM D. HARKINS,
ERNEST B. KEITH

UNIVERSITY OF CHICAGO

THE MICHIGAN ACADEMY OF SCIENCE, ARTS AND LETTERS

THE twenty-ninth annual meeting of the Michigan Academy of Science, Arts and Letters was held in Ann Arbor, April 2-4, 1924. The presidential address, "Science and letters," was delivered by the president, Campbell Bonner. Dr. H. G. Moulton, director of the Institute of Economics, Washington, D. C., addressed the academy on "The European economic situation."

Besides these papers the following program was presented:

GENERAL SESSION

A comparison of the Permian of North America with that of Europe: E. C. CASE.

Glimpses of recent tendencies in British and French psychology: W. B. PILLSBURY.

SECTION OF ANTHROPOLOGY

H. H. Bartlett, *vice-president*

Modes of cousin marriage in India: T. C. HODSON.

Greek and Roman stories of children nursed by animals: EUGENE S. MCCARTNEY.

A trephined Indian skull from Devil River, Michigan: W. B. HINSDALE.

Prehistoric "forts" of Michigan, with special reference to the Missaukee Preserve: W. B. HINSDALE.

Paleolithic (?) implements from Washtenaw County, Michigan: J. B. STEERE.

Early musical scales: CHAS. K. WEAD.

The East Indian and Philippine alphabets: H. H. BARTLETT.

Reincarnation and its relation to the cycle of life customs and to social structure: T. C. HODSON.

SECTION OF BOTANY

R. P. Hibbard, *vice-president*

An annotated list of the higher plants of the region of Douglas Lake, Michigan: F. C. GATES and J. H. EHLERS.

An ecological study of Mud Lake, Cheboygan County: ELSIE E. ERICKSON, LOUIS E. GOE and EDITH WOOLLETT. Presented by J. H. EHLERS.

Meteorological data, Douglas Lake, Michigan: F. C. GATES. Presented by J. H. EHLERS.

Vegetation of the Douglas Lake region: F. C. GATES. Presented by J. H. EHLERS.

The ecological structure of the hardwood forests of North America: H. A. GLEASON (by invitation).

The flora of the peninsula of Virginia: EILEEN W. ERLANSON.

The flowering plants and ferns of Warren Woods, Berrien County, Michigan: C. BILLINGTON.

Leaf fall in the monsoon forest (illustrated): L. A. KENOYER.

Supplement to the "Guide to the literature for the identification of Fungi": E. A. BESSEY.

The relationships of the Ascomyceteae, Basidiomyceteae, and Telisporeae (illustrated): E. A. BESSEY.

Notes on selective action of preservatives on mold spores: ADELIA MCCREA.

The Genus Lepiota in the United States: C. H. KAUFFMAN.

Formes fraxineus in culture: DOW V. BAXTER.

The Pythiomorphaceae and a species of the group from Michigan: BESSIE B. KANOUSE.

The perfect stage of the Valsaceae in culture and the hypothesis of sexual strains in this group: L. E. WEHMEYER.

The morphological development of Asterosporium hoffmani Kze: W. A. ARCHER.

Morphology of the seed in Phytolacca (illustrated): E. F. WOODCOCK.

The mung bean (lantern): H. H. M. BOWMAN.

Herbaria—useful and otherwise: E. E. WATSON (by invitation).

Growth and yield of corn as influenced by the date of planting: D. A. SEELEY (by invitation).

A comparative study of Lauraceous woods: W. W. TUPPER.

The inheritance of red bud color in crosses of Oenothera pratincola and related forms: FRIEDA COBB BLANCHARD and H. H. BARTLETT.

The absence of chromosome pairing during meiosis in Oenothera biennis: STERLING H. EMERSON (by invitation).

Do balanced lethals explain the Oenothera problem? STERLING H. EMERSON (by invitation).

Genetic factors for yellow endosperm color in maize: E. G. ANDERSON.

X-rays and the frequency of non-disjunction in Drosophila: E. G. ANDERSON (by invitation).

Experiments with the annual variety of sweet clover (Melilotus alba): HUGH B. SMITH (by invitation).

An injurious factor affecting the viability of Phaseolus vulgaris, soaked prior to germination: PAUL TILFORD, C. F. ABEL and R. P. HIBBARD.

Variability in wheat seedlings in water (solution) cultures: R. P. HIBBARD.

(Joint session with Section of Zoology)

Michigan state parks: P. J. HOFFMASTER.

Douglass Houghton and the Schoolcraft expeditions of 1831 and 1832: LOIS SMITH EHLERS.

The osmotic properties of living cells: L. J. HEILBRUNN.

The biological sciences in Albion College: A. M. CHICKERING.

The Idaho white pine forest (illustrated): W. E. PRAEGER.

The ecologic communities of Charlevoix County and vicinity (illustrated): L. R. DICE.

SECTION OF ECONOMICS

C. E. GRIFFIN, *vice-president*

What is income? W. A. PATTON.

Going value: B. W. LEWIS.

Fair return: N. L. SMITH.

Financing in the automobile industry: L. H. SELTZER (by invitation).

The interrelation of fatigue, incentives and efficiency: Z. C. DICKINSON.

Cooperation in our future agriculture: J. T. HORNER (by invitation).

Progress report on the Michigan Land Economic Survey: P. S. LOVEJOY and WADE DE VRIES.

A type study in regional geography: K. C. McMURRY (by invitation).

Henry Carter Adams on the labor problem: L. VOLIN (by invitation).

Recent criticisms of the theory of international values: C. H. MAY (by invitation).

Recent data on public health: A. E. WOOD (by invitation).

SECTION OF GEOLOGY AND MINERALOGY

Helen Martin, *vice-president*

An interesting Ordovician reef on Sulphur Island, Lake Huron (illustrated): G. M. EHLERS.

Contributions to the stratigraphy of certain Ordovician deposits of Michigan and adjacent parts of Ontario: E. O. ULRICH, A. E. FOERSTE, W. H. SHIDELER, G. M. EHLERS and R. C. HUSSEY. Presented by Mr. EHLERS and Mr. HUSSEY.

Marcasite from the Racine Dolomite, Racine, Wisconsin: C. W. COOK.

Distribution and character of the Bell Shale in Presque Isle and Alpena Counties, Michigan: R. A. SMITH.

The Upper Traverse Formation in Antrim and Cheboygan Counties, Michigan: R. A. SMITH.

Notes on the Antrim Formation: R. A. SMITH.

The peculiar color of Alexandrite: E. F. HOLDEN.

New methods of revealing buried geological structures (illustrated): W. H. HOBBS.

The stratigraphy of the Mexican oil fields (illustrated): W. A. VER WIEBE (by invitation).

Demonstration of Triassic vertebrates from Texas: E. C. CASE.

Some unusual specimens of float copper (illustrated): E. H. KRAUSE (read by E. F. HOLDEN).

Glacial formations north of the driftless area: FRANK LEVERETT.

Some new features in regard to the formation of the campus outwash plain, University of Michigan: R. C. HUSSEY.

Coral reefs in their Tectonic relationships (illustrated): W. H. HOBBS.

The geology of China: H. T. LEE (by invitation).

Note on Andalusite, a new use and some thermal properties (illustrated by specimens): A. B. PECK.

An interesting occurrence of Molybdenite: C. W. COOK.

Assaying with the blowpipe; lead, copper and silver ores: W. F. HUNT.

SECTION OF LANGUAGE AND LITERATURE

John W. Scholl, *vice-president*

Browning's conception of love as represented in "Paracelsus": WILLIAM O. RAYMOND.

Assyrian medicine in the Seventh Century, B. C.: LEROY WATERMAN.

Graphophonic studies—Accent in English: JOHN H. MUYSKENS.

Corneille, a seventeenth century modernist: EUGENE E. ROVILLAIN.

Deism before Lord Herbert: LOUIS I. BREDVOLD.

The Berlin papyrus of Genesis: A paleographical study (illustrated): HENRY A. SANDERS.

The contribution of Nahuatl to Spanish phonetics: NORMAN L. WILLEY.

SECTION OF HISTORY AND POLITICAL SCIENCE

Everett S. Brown, *vice-president*

New light on Coronado: ARTHUR S. AITON.

Development of self-government in the Dutch East Indies: RALSTON HAYDEN.

The Philippines after twenty-five years of American sovereignty: MAXIMO KALAW (by invitation).

The historical background of eastern Europe: PRESTON SLOSSON.

How will the student be trained to know what is history? HARRY L. GIBB.

SECTION OF MATHEMATICS

T. H. Hildebrandt, *vice-president*

(Program presented by the Michigan Section of the Mathematical Association of America.)

The theory of sampling: H. C. CARVER.

Some configurations associated with a net on a surface: V. G. GROVE.

On the Hatchet planimeter: D. KAZARINOFF.

Early American arithmetics: L. C. KARPINSKI.

Some problems in yield in land contracts: L. C. EMMONS.

A theorem on means: N. H. ANNING.

SECTION OF PSYCHOLOGY

H. F. Adams, *vice-president*

An experimental study of the emotions: F. L. DIMMICK.

The place of consciousness in the behaviorist scheme: O. O. NORRIS.

The significance of emotions from the behavioristic standpoint: T. S. HENRY.

Some phases of Freudian psychology: N. A. HARVEY.
Extra-curriculum activities and after success: ADELBERT FORD.

Discussion, Should mental tests be substituted for examinations? Affirmative: N. A. HARVEY, E. B. SKAGGS. Negative: C. H. GRIFFITHS, T. S. HENRY.

SECTION OF SANITARY AND MEDICAL SCIENCE

Philip Hadley, vice-president

Some properties of the Rabies virus: ALDEN F. ROE.*Observations on transmissible bacterial autolysis:* GEORGE COLLINS (by invitation).*Some precursors of lysine:* D. A. MCGINTY (by invitation).*The cultivation of Bacillus abortus:* D. E. HALSEY (by invitation).*Bacterium Pullorum studies:* W. L. MALIMAN (by invitation).*The Detroit Filtration Plant and methods of laboratory control:* WM. M. WALLACE (by invitation).*The pH values represented by Medalia's colorimetric standards:* MAX S. MARSHALL.*Relation between salivary and blood urea:* HELEN UPDEGRAFF (by invitation).*Ultra-violet energy: its therapeutic application:* JOHN F. KELLEY (by invitation).*Comparative study of precipitinogen and precipitin curves:* GEO. F. FORSTER.*Variations in the intestinal flora of rats:* HELEN S. MITCHELL.*Regarding the vermicide action of iodine:* W. L. CHANDLER (by invitation).*The lime content of saliva and its relation to enamel structure:* U. G. RICKERT (by invitation).*Bacillus acidophilus: Its relation to dental caries:* R. W. BUNTING.*Oxidation of the sulphur in cystine and related sulphur compounds by the animal organism:* HOWARD B. LEWIS.*Congenital cystic kidney:* JAMES E. DAVIS.*The development of the bovine placenta and its significance in uterine infections:* E. T. HALLAM (by invitation).*The localization of Spirochaeta Pallida in human tissues:* ALDRED S. WARTHIN (by invitation).*The localization of Leptospira icteroides in tissues of experimental animals:* RUTH WANSTROM (by invitation).*The inhibitory control of the stomach of Necturus:* T. L. PATTERSON.*Respiration of the tubercle bacillus:* F. G. NOVY.*(1) Estimation of Co₂ dissolved in culture media;*
(2) Respiration of protozoa: MALCOLM H. SOULE.*The bacteriology and serology of scarlet fever:* R. W. PRYER.*Comparative study of different antigens in the Kahn Precipitation Test:* PEARL KENDRICK, W. W. DUEMLING and R. L. KAHN.*Observations on the Kahn precipitation test:* E. T. SCHUEREN.*The clinical application of the Kahn Precipitation Test:* HARTHER L. KEIM.*Some factors governing the serology of syphilis:* R. L. KAHN.*The relation between health and the price of rubber in the Amazon Valley:* CARL D. LA RUE.

SECTION OF ZOOLOGY

L. R. Dice, vice-president

Are Protozoa simple animals? (illustrated): C. V. TAYLOR (by invitation).*Some problems in the propagation of trout in Michigan:* JAN METZELAAR.*Variation in the maximum depth at which fish can live during summer in a moderately deep lake with a thermocline:* (Read by title): FRANK SMITH.*Observations on the early larval activities of Nympha maculalis (Lepidoptera):* PAUL S. WELCH.*A new form of acarid parasitism in Orthoptera:* PAUL S. WELCH and L. P. WEHRLE.*Recent advances in the classification of the North American Unionidae:* BRYANT WALKER.*A list of Coleoptera from Charlevoix County, Michigan:* MELVILLE H. HATCH.*The distribution of some species of the genus Ameiva:* A. G. RUTHVEN.*The life cycle and growth of lampreys:* CARL L. HUBBS.*An ichthyological survey of the Boardman River system of Michigan (illustrated):* T. L. HANKINSON.*Notes on some Michigan snakes:* T. H. LANGLOIS.*Observations on the life-history of the newt in northern Michigan:* D. E. S. BROWN.*A collection of amphibians and reptiles from southeastern Missouri and southern Illinois:* FRANK N. BLANCHARD.*A key to the snakes of the United States, Canada and Lower California:* FRANK N. BLANCHARD.*A name for the black Pituophis from Alabama:* FRANK N. BLANCHARD.*The forms of Carphophis:* FRANK N. BLANCHARD.*Notes on the birds of Charlevoix County and vicinity, (read by title):* J. VAN TYNE.*Irritability in Amoeba proteus, (read by title):* H. T. FOLGER.*Illustrations of the life-histories of Michigan birds. 1. The great blue heron, (read by title):* W. E. HASTINGS.*The predatory animal control work of the Michigan department of conservation, (read by title):* EDGAR COCHRAN.*Further notes on the making of dried preparations, (read by title):* GEORGE R. LARUE.*Activated trypsin for cleaning skeletons, (read by title):* GEORGE R. LARUE.

This session of the academy was well attended and was one of the most successful in its history.

Resolutions were adopted favoring the establishment of a state or national park on Isle Royale, Lake Superior; supporting the establishment of a national monument covering the Glacier Bay Region, Alaska; advocating the extension of the Superior National Forest in Minnesota; and advocating the preservation of the ancient relics, monuments, earthworks and other prehistoric remains and records of Michigan.

The officers elected for the ensuing year are as follows:

President: H. H. Bartlett, Ann Arbor.
Vice-President: E. S. Brown, Ann Arbor.
Secretary-treasurer: L. R. Dice, Ann Arbor.
Editor: P. S. Welch, Ann Arbor.
Librarian: W. W. Bishop, Ann Arbor.

The following section chairmen were elected:

Anthropology: E. S. McCartney, Ann Arbor.
Botany: J. B. Pollock, Ann Arbor.
Economics: Z. C. Dickinson, Ann Arbor.
Geology and Mineralogy: L. M. Gould, Ann Arbor.
History and Political Science: Arthur S. Aiton, Ann Arbor.
Language and Literature: Oscar J. Campbell, Ann Arbor.
Mathematics: E. R. Sleight, Olivet.
Psychology: Samuel Renshaw, Kalamazoo.
Sanitary and Medical Science: C. C. Young, Lansing.
Zoology: H. M. MacCurdy, Alma.

L. R. DICE,
Secretary-Treasurer.

THE OHIO ACADEMY OF SCIENCE

THE thirty-fourth annual meeting of the Ohio Academy of Science was held at the Ohio State University on April 18 and 19, 1924, under the presidency of Dr. Kirtley F. Mather, of Denison University, Granville, Ohio. About 100 members were in attendance.

Dr. Herbert Osborn, chairman of the committee on necrology, read an appreciative memoir of Dr. T. C. Mendenhall, of Ravenna, Ohio, whose death occurred at his home on March 22, 1924. A member since 1912 and president in 1914, Dr. Mendenhall was always deeply and actively interested in the work of the academy and rarely ever missed an annual meeting. He was trustee of the McMillin Research Fund from 1916 to the time of his death. It is probably safe to say that no other member of the academy held the love and esteem and the commanding influence in the academy that Dr. Mendenhall did. His passing is an irreparable loss. The memoir will be published in full in the near future in the *Ohio Journal of Science*.

Fifty-nine new members were elected, and the following fourteen members were elected to fellowship: Ralph V. Bangham, John W. Baringer, Samuel Wood Chase, Guy W. Conrey, Floyd Carlton Dockeray, H. A. Gossard, Roy Graham Hoskins, Lawrence L. Huber, Thomas G. Phillips, Edmund Seerest, Ernest Rice Smith, Paris B. Stockdale, Herbert Anderson Toops and Charles J. Willard.

Officers for 1924-25 were elected as follows: *President*, E. N. Transeau, Ohio State University; *secretary*, William H. Alexander, U. S. Weather

Bureau, Columbus; *treasurer*, A. E. Waller, Ohio State University; *vice-presidents—zoology*, R. V. Bangham, Wooster College; *botany*, Edmund Seerest, Ohio Agricultural Experiment Station; *geology*, G. W. Conrey, Ohio State University; *medical sciences*, R. G. Hoskins, Ohio State University; *physical sciences*, C. D. Coons, Denison University; *psychology*, F. C. Dockeray.

Quite a number of the members of the academy participated, by invitation, in a field meeting put on by the Ohio Forestry Association on September 21 and 22, 1923.

The scientific program was as follows:

PRESIDENTIAL ADDRESS

Geologic factors in organic evolution: KIRTLEY F. MATHER.

PUBLIC ADDRESS

How shall we measure the quantity of life? ALBERT P. MATHEWS.

PAPERS

Laboratory exercises in atomic structure: WM. LLOYD EVANS and JESSE E. DAY.

The valley of ten thousand smokes in 1923: KIRTLEY F. MATHER.

Recent work in endocrinology: R. G. HOSKINS.

The weather: W. C. DEVEREAUX.

Pressure and life: STANLEY G. ZINKE.

Glare (with demonstrations): F. C. CALDWELL.

Medical education in colonial America: F. C. WAITE.
The relation of fish production to forestation: RAYMOND C. OSBURN.

The application of radio in distance determination: GEORGE LEWIS.

A hydrogen sulfide delivery system: JESSE E. DAY.

Respiration in the orthoptera: M. O. LEE.

The nutrition of euglena gracilis: W. J. KOSTER.

Pest hunts in Wood County: E. L. MOSELEY.

The development of the intestinal coiling of the minnow (campostoma anomalum): W. C. KRAATZ.

Morphology of gigantorhynchus (ancanthocephala): M. W. CASKEY.

The periodical cicada in Ohio: H. A. GOSSARD.

An Ohio record for the dragonfly (tachopteryx thoreyi): JAMES S. HINE.

Parasites of the black bass: R. V. BANGHAM.

Habits of the common water snake, particularly in its relation to fish: F. A. HANAWALT.

New terms suggested to designate the various modes of nutrition on organisms: W. J. KOSTER.

Recent mammal records in Ohio: JAMES S. HINE.

Ecologic notes on some homoptera of the Southwest: HERBERT OSBORN.

The early differentiation of the longitudinal zones in the neural plate of rana: R. A. KNOUFF.

Two new hereditary tumors in drosophila: IRA T. WILSON.

The primitive lines in amblystoma: F. L. LANDACRE.