

Robert R. Tatnall, 5 years. Ex-officio: Ernest Merritt, President, American Physical Society; Alfred D. Cole, Secretary, American Physical Society.

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Secretary, Section B

NEW ORLEANS MEETING—AMERICAN CHEMICAL SOCIETY

TITLES AND ABSTRACTS OF PAPERS

OPENING address by A. D. Little, "The Industrial Resources and Opportunities of the South."
CHARLES S. ASH: *Contributions of the Chemist to the Wine Industry.*

J. B. F. HERRESHOFF: *Contributions of the Chemist to the Copper Industry.*

E. T. BEDFORD: *Contributions of the Chemist to the Corn Products Industry.*

JAMES LEWIS RAKE: *Contributions of the Chemist to the Asphalt Industry.*

DAVID WESSON: *Contributions of the Chemist to the Cotton-seed Oil Industry.*

G. S. BROWN: *Contributions of the Chemist to the Cement Industry.*

W. D. HORNE: *Contributions of the Chemist to the Sugar Industry.*

SIDNEY MASON: *Contributions of the Chemist to the Incandescent Gas Mantle Industry.*

FRANKLIN W. HOBBS: *Contributions of the Chemist to the Textile Industry.*

H. WALKER WALLACE: *Contributions of the Chemist to the Fertilizer Industry.*

F. R. HAZARD: *Contributions of the Chemist to the Soda Industry.*

WILLIAM H. TEAS: *Contributions of the Chemist to the Leather Industry.*

JOHN A. WESENER and GEORGE L. TELLER: *Contributions of the Chemist to the Flour Industry.*

GASTON D. THEVENOT: *Contributions of the Chemist to the Brewing Industry.*

R. I. BENTLEY: *Contributions of the Chemist to the Preserved Foods Industry.*

WM. P. MASON: *Contributions of the Chemist to the Potable Water Industry.*

R. C. SCHUPPHAUS: *Contributions of the Chemist to the Celluloid and Nitrocellulose Industry.*

A. A. HOUGHTON: *Contributions of the Chemist to the Glass Industry.*

F. L. MOORE: *Contributions of the Chemist to the Pulp and Paper Industry.*

Public address to the people of New Orleans, by

Bernhard C. Hesse, "The Chemists' Contribution to the Industrial Development of the United States—A Record of Achievement."

The above papers have been printed in full in the April issue of the *Journal of Industrial and Engineering Chemistry*.

DIVISION OF AGRICULTURE AND FOOD CHEMISTRY
Floyd W. Robinson, chairman

Glen F. Mason, secretary

E. H. S. BAILEY and W. S. LONG: *On the Composition of the Seeds of Martynia Louisiana (Unicorn or Devil's Claws).*

This plant, which grows wild through the central west and especially in the dry climate of western Kansas, Colorado and New Mexico, has been investigated with reference to utilizing the oil contained in the seed. It has been found that this seed contains over sixty per cent. of a bland oil, 24.21 per cent. of protein and 4.55 per cent. of starch. An examination of the oil shows that it compares favorably with some edible oils, especially cotton-seed oil. The authors suggest that since the plant is so well adapted to a dry climate, experiments should be made to determine whether it may not be profitably cultivated as an oil-bearing plant.

EDWARD GUDEMAN: *Action of Milk on Colloids.*

W. D. BIGELOW and F. F. FITZGERALD: *The Relation of the Refraction, Specific Gravity and Solids in Tomatoes and Tomato Pulp.*

As a result of the examination of a considerable number of fresh and canned tomatoes, and of pulps made up under known conditions, tables have been constructed to facilitate analytical work. The generalizations given below are within the limits of analytical error. The filtrate referred to is obtained by throwing a sample of tomato pulp, or crushed tomato product, on a folded filter. Raw tomatoes should be cooked previously in a reflux condenser. The solids are determined by drying in vacuo at 70° and under atmospheric pressure at the temperature of boiling water.

Solids of pulp in vacuo = solids of pulp at atmospheric pressure $\times 1.085$,

Solids of pulp in vacuo = solids of filtrate in vacuo $\times 1.125$,

Solids of filtrate in vacuo = solids of filtrate at atmospheric pressure $\times 1.12$.

From the specific gravity of the filtered liquid at 20° C., the per cent. of solids of the pulp (not of the filtrate) may be ascertained from the Windish wine table.¹ The figure 0.05 should be de-

¹ Table V., Bull. 107, Bureau of Chem.

ducted from the percentage of solids given in that table.

The solids in the filtrate may be ascertained from the index of refraction, using Wagner's table for beer and wine extract. This table is applicable without correction to the juice of fresh or canned tomatoes. When applying it to the filtrate from pulp of the usual concentration, the figure 0.17 should be deducted from the percentage of solids as given. If the product has been salted, the sodium chloride should be determined and a corresponding correction made in refractive index.

H. S. GRINDLEY, W. J. CARMICHAEL and C. I. NEWLIN: *The Influence of one Feedingstuff upon the Digestibility of Another.*

Eight digestion experiments, each of ten days' duration, were made in which each of three rations—wheat flour middlings alone, wheat flour middlings and ground corn combined in the ratio of 1:1, and ground corn alone—were fed to four pigs. The average results as well as the individual data proved that either wheat flour middlings or ground corn in a ration composed of equal parts of each does influence the digestibility of some of the nutrients of the other feed. It is evident from the results that one feedingstuff does influence the digestibility of another.

G. S. FRAPS: *Chemical Investigations at the Texas Experiment Station.*

The article gives a synopsis of the chemical investigations at the Texas Experiment Station, including the work of the state chemist, the feed control, Adams projects and the Hatch projects. The work deals chiefly with the composition and properties of soils, the composition and values of fertilizers, the adulteration of feeds, the studies of the nutritive values of feeding stuff.

W. J. CARMICHAEL, C. I. NEWLIN and H. S. GRINDLEY: *Individuality of Pigs as to the Completeness with which they Digest their Feed.*

The results of forty digestion experiments, each of ten days' duration, in which each of four rations were fed to four pigs proved that in some instances one animal gave coefficients of digestibility for protein, dry matter, nitrogen-free extract, and ether extract that were always significantly higher than the corresponding coefficients for another animal even in ten tests with four different rations. In a series of experiments, when different rations were used with the same animals, the coefficients, as a whole, for some animals were constantly higher than those for other animals,

which showed a consistent relation with reference to individuality.

W. E. TOTTINGHAM: *The Effect of Litters on the Fermentation of Manure.*

Oak shavings, pine shavings and oat straw were incorporated with separate lots of a mixture of fresh horse and cow manures. The changes over a period of twelve weeks were compared with those of a control lot of manure. Dry matter decreased most, by a wide margin, in the straw-littered manure and least in the control. The percentage of the total organic matter soluble in water decreased most in the shavings-littered manures and least in the straw-littered lot. In all the lots the percentage of the total ash soluble in water decreased considerably. The percentage of the total nitrogen soluble in water decreased more in the shavings-littered manures than in the other lots. The percentage of the total nitrogen in the form of ammonia reached its highest value in the control manure. Ammonia production was most sustained in the straw-littered lot. Loss of nitrogen was greatest in the shavings-littered manures and least in the straw-littered lot. Yields of corn and barley in field plot tests have shown only slight superiority of stall manure with straw litter as compared with stall manure with shavings litter.

CHAS. P. FOX: *Bread: Weight of an Akron (Ohio) Loaf.*

W. C. TABER: *Tamarind Syrup.*

The tamarind is a leguminous tree found in tropical and semi-tropical countries. The pulp found in the pod is remarkable for its high acidity, often 12 or 15 per cent., and for its high content of sugar, amounting sometimes to 40 per cent. A syrup prepared from this pulp has come into use in the United States as a summer beverage. After dilution with water, this syrup forms a refreshing acid drink. For the purpose of detecting adulterated tamarind syrups, made largely from tartaric or citric acid and sugar, and colored with caramel, a series of syrups were prepared with known amounts of the pulp. The analytical results obtained are of value in indicating the amount of tamarind fruit used in a syrup.

DAVID KLEIN: *A Survey of the Frozen Egg Industry of Chicago.*

CHARLES L. PARSONS,
Secretary

(To be continued)