W. Elder and is covered by U. S. Patents. It is decidedly active and the activity increases in proportion to the fineness of the abrasive used and the length of time the mill is operated. The activity curve of hydrogenation rises at first with this catalyzer and reaches a maximum before declining. The catalyst prepared by this process is certainly metallic in nature and not a sub-oxide, therefore proving that a sub-oxide nickel catalyzer is not essential for hydrogenation. Since the nickel shot has been subjected to a temperature above the melting point of nickel (1470° C.), it is obvious that the previous theory that high temperatures are inimical to catalytic material must be revised, although the facts in connection with the preparation of chemical catalyzer by the reduction of nickel oxide are well known, low temperatures producing active, high temperatures inactive catalysts. The Elder process is of great importance in a practical way and for the theory of catalytic action.

Sulfites as standards for oxidizing reagents: S. Lantz Shenefield, Frank C. Vilbrandt and James R. Withrow. The use of sulfur dioxide gas as a standard for iodine or permanganate titration is beset with the host of troubles which are always possible when attempting to predestinate the content of a gas mixture in which one component is water soluble. This paper endeavors to point out the possibilities of using a weighable sulfite, preferably the heptahydrate of sodium sulfite which is mentioned in the literature for standardization purposes. A systematic correlation of the literature from this point of view is given.

Crystalline structure of paraffine wax: D. B. Mapes. A method is described for determining the structure of the wax for the purpose of ascertaining the quality in advance of the actual sweating and pressing. Paraffine distillate from petroleum is dissolved in chloroform, the solution chilled and centrifuged. The wax layer obtained is examined microscopically, while a low temperature is maintained by means of a constant temperature slide.

Mid-continent gasoline: C. K. Francis. The characteristics and methods of determining these properties were described, applying particularly to gasoline made from petroleum and natural gas of the mid-continent district. The deposit in automobile cylinders, commonly called "carbon" is, in reality, sulphur, this substance being found in crude gasoline only in very minute quantities. But gasoline is often placed on the market with large quantities of sulphur introduced during the process of refining.

The relation of chemistry (analytical and thermal) to the fabrication of steel: J. Culver Hartzell.

The relation of the electric furnace to the fabrication of carbon and alloy steels with special reference to the chemical and physical changes produced: J. Culver Hartzell.

Industrial uses of activated charcoal: O. L. Barnebey.

Inclusions and ferrite crystallization in steel: II. Solubility of inclusions: E. G. Mahin. It was shown in an earlier paper that non-metallic inclusions undoubtedly cause separation of ferrite around them, from slowly cooling steel of hypo-eutectoid composition. There was advanced to account for this action the hypothesis that the inclusion dissolves slightly in the austenite of hot steel and this lowers the solubility of ferrite and causes supersaturation of the latter first in the zone immediately surrounding the inclusion. In the present paper this hypothesis is tested by inserting metallic cylinders of various alloys and of special steels carrying abnormal per cents. of special elements, into normal steels. In nearly all cases heating to above the transformation range and slow cooling causes the appearance of a well defined ring of ferrite about the insert. This is presumed to be due to the migration of the elements of the inserts into the surrounding steel, this having an effect upon ferrite solubility similar to that of non-metallic inclusions. Lantern slides, made from actual photomicrographs, were shown to illustrate the experiments.

Charles L. Parsons,
Secretary

(*To be continued*)

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