lable protein and never with those free from the *albumin* already mentioned. The toxicity of the products consisting chiefly of this albumin was extremely great, the most active preparation proving fatal when administered subcutaneously to rabbits in the small dose of 0.0005 mg. per kilo of body-weight. Each sample of ricin prepared by the authors showed in marked degree characteristic agglutinating properties in its behavior toward erythrocytes; and the pathological findings after intoxication were typical. The other proteins of the seed are devoid of the properties noted for ricin, thus demonstrating the applicability of the methods of separation employed. The toxicity of the active preparations is proportional to the content of coagulable albumin, the purest specimens containing, as their analysis shows, little else than protein. Thus far their determinations have shown that the ricin prepared by the authors does not differ from ordinary proteins in composition, heat coagulation, color reactions, precipitation reactions, specific rotation, or in the state of combination of its nitrogen. By tryptic digestion the agglutinating power and toxicity of pure ricin may be greatly impaired or destroyed. The experience of the authors lends no encouragement to the attempts to "purify" such toxins by methods designed to eliminate protein substances from the active materials.

40 (86). "**On a method of determining indol,**" with demonstrations: **C. A. HERTER** and **M. LOUISE FOSTER.**

The method described by the authors constitutes a rapid and accurate means of determining indol. It is based on the fact that indol, in slightly alkaline solution, readily condenses with naphthoquinon sodium mono-sulfonate, and forms a blue crystalline compound which is only very slightly soluble in water and is readily extracted by chloroform from a watery solution or suspension. The condensation compound results from the union of two molecules of indol with one of the naphthoquinon compound. The union does not occur as in the case of compounds with amins, with the elimination of the sulfonic acid group, but occurs between one of the carbonyl groups of the naphthoquinon compound and the imid group of the indol. The new compound is, therefore, a di-indyl naphtho-ketone mono-sulfonate. The solubility of this substance in chloroform is about one part in 4,000 of the solvent, and is suffi-

ciently great to permit a rapid and thorough extraction of the substance. Chloroform containing the di-indyl compound has a red color, very like that of hemoglobin. Owing to this circumstance, the condensation compound in chloroform can be approximated colorimetrically in a convenient manner by comparing the tint of the solution with that of the orange-red glass scale of the Fleischl hemoglobinometer. When more accurate results are desired, the chloroform is evaporated and the residue of the di-indyl compound weighed.

It was found that the method here indicated serves for the recovery of a very large percentage of indol from peptone solutions or bouillon. From solutions containing a little protein, the indol may be recovered almost quantitatively. The presence of a large proportion of protein may cause the retention of considerable indol. The distillation should be carried on directly, without steam, from the acidified fluid. The presence of indol in a small fraction of distillate is best ascertained by boiling the acid solution with a few drops of a 2 per cent. alcoholic solution of di-methyl amido-benzaldehyde.

Skatol forms an homologous and similar compound with the naphthoquinon reagent, but this substance is violet rather than blue.

41 (87). "**Anesthesia produced by magnesium salts,**" a preliminary communication, with demonstrations: **S. J. MELTZER** and **JOHN AUER.**

The authors exhibited to the society two guinea-pigs, which were deeply narcotized by injections of magnesium sulfate. One of these animals had been similarly narcotized twice before, and fully recovered each time. In their physiological and toxicological studies of magnesium salts, the authors found that by subcutaneous injections of certain quantities of sulfate or chlorid of magnesium, animals can be brought into a state of deep anesthesia, during which any operation can be performed upon them without the least resistance. If the dose of the salts is not too large, heart-beat, blood-pressure and respiration remain nearly normal. It was tested on dogs, cats, rabbits, guinea-pigs, white rats and frogs. A gram and a half of magnesium sulfate is about the effective dose for most of the animals. The chlorid has to be used in smaller