able that this family could stand 40% more toxin when mixed with the antitoxic unit than those of average susceptibility. Other mothers were traced whose offspring possessed less resistance than the ones described, but could still neutralize 20% more toxin when mixed with the antitoxic unit than the average.

It would seem from these observations that different degrees of susceptibility to toxin are to be found among guinea-pigs and that the special degree possessed by any one is not to be attributed to individual variation, but to a family trait or character. The resistance in the cases cited could not be attributed to any preliminary treatment with toxins and antitoxins. Experiments are now under way to determine the part played by the male in the transmission of toxin resistance. In the case of the most resistant family, the four litters were the offspring of two males.

17 (63). **"The protective action of venom upon blood-corpuscles,"** with demonstration: **HIDEYO NOGUCHI.** (Presented by **SIMON FLEXNER.**)

That concentrated solutions of venom fail to destroy and tend to preserve blood-corpuscles was noted by Mitchell and Stewart. Among the recent writers who have paid especial attention to the interpretation of this phenomenon are Kyes and Sachs. They ascribe it to deviation of the hemolytic complement through the excess of venom amboceptors. The study which forms the basis of this brief communication shows the hypothesis of Kyes and Sachs to be untenable, since it could be demonstrated that (1) the protective action fails to occur with venom in which, through heating to from 95° to 100° C., the hemolytic principle has been preserved, but certain other constituents have been coagulated, and (2) the action extends to protection of the corpuscles from laking by water, ether, saponin, etc. The conclusion which has been reached by the author is that venom unites with the globulins and especially with the hemoglobin of the red corpuscles, yielding a water-insoluble compound to which the protection is due. Various substances, such as salts, acids and alkalis, restore the hemolyzability of the corpuscles by dissolving the venom-hemoglobin compound. The permeability of the corpuscles is not markedly altered.