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DISCUSSION AND CORRESPONDENCE.

HOW TO AVOID THE DANGERS OF FORMALIN.

TO THE EDITOR OF SCIENCE: In the issue of SCIENCE for October 22d I note a letter by Dr. Dall, of the United States National Museum, in which the use of formalin for the preservation of zoological objects for dissection is declared to be dangerous to the cuticle, to the digital neural terminals and to the eyes of the dissector.

When working with formalin my eyes and nasal passages have been affected and it seemed to me that its use might be fraught with some danger. But the effect of the gas arising from specimens and of the solutions has never given in my case such serious trouble as seems to have been given the person of whom Dr. Dall speaks. To be contrasted with the effects of the reagent in this case is the fact that formalin and formaldehyde have come to be regarded as very important germicidal disinfectants to be used in inhabited rooms, where, we are told by members of the medical profession to which Dr. Dall appeals, that their use need not endanger in any way the inhabitants. Special lamps are on the market for generating formaldehyde from wood alcohol, and to be used in just such rooms. There may also be noted an experiment performed upon a calf, in which the animal was exposed for five hours to an atmosphere containing about 2% of formaldehyde. The only noticeable effect was a slight cough and a slight watering of the eyes, both of which disappeared upon bringing the animal into fresh air. What might have happened had the animal been subjected to such an exposure daily for several weeks is a question that remains to be solved. In view of the fact that formalin seems destined to be used to a very great extent in laboratories and museums, and also in view of its having been recommended as a disinfectant to be used as noted above, experiments to determine how great an exposure eyes, cuticular organs and mucous membranes can stand without injury can have nothing less than a very great importance.

But even though the use of the reagent is as dangerous as the case of the slug dissector mentioned by Dr. Dall would lead one to think, such dangers may be obviated by taking advantage of the strong affinity formaldehyde and ammonia have for one another. In rooms where formaldehyde is used dishes of ammoniated water may be placed, and specimens preserved in formalin may be washed in ammoniated water before dissection, with the result of completely neutralizing the effects of the disinfectant or preservative.

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WASHINGTON, D. C.

PROFESSOR CATTELL'S REVIEW OF 'SIGHT.'

I RARELY ever reply to any criticism of a work of mine. I never do so unless to explain something misunderstood. But in the case of Professor Cattell's review of 'Sight' in SCIENCE for September 24th, I feel the less hesitancy because of his generous estimate of its value. There are three points on which I wish to explain myself more fully.

1. Professor Cattell objects to my view that "the central spot is necessary to the development of the higher faculties of the mind," and asks in rejoinder: "May not the mental faculties of the born-blind be developed?" And well might he object if I implied anything so absurd. But he has entirely mistaken my meaning. Perhaps I am partly responsible for a possible ambiguity, and, therefore, thank him for drawing my attention to it. I did not mean development of the higher faculties in the *ontogeny*, but in the *phylogeny*, of man; not in the education of the *individual*, but in the origin of the *race*. Perhaps, however, I ought to have used the word *evolution* instead of development. I shall make the correction.

2. Again Professor Cattell objects to my saying: "We see things double except under certain conditions." He says: "This is bad psychology. We *learn* to see them double." Of course, we learn to consciously see them double. But if we see only what we consciously see, we see comparatively little. The phenomena of double vision lie so near the surface of consciousness that the least attention recalls them. They may be called subconscious, but we base our judgments on them all the time. Surely it is the business of psychology to bring