

observed. The membrane tympani were healthy. It was agreed that the condition was one of tuberculous meningitis, and in view of impending coma, as a result of intra-cerebral pressure, it was decided to open the sub-arachnoid space and afford drainage for a few days. A trephine opening was made in the skull on the left side, between the mastoid process and the external occipital crest. The dura bulged into the opening, but no pulsation was visible. The dura and arachnoid were incised, and some thirty drops of a slightly-greenish fluid escaped. The cerebellum then bulged into the opening. A silver probe, bent at a right angle, was then introduced between the cerebellum and the arachnoid, and directed inward toward the falx cerebelli. As soon as the latter was felt, the probe was rotated, so that the end projected toward the sub-arachnoid space, between the cerebellum and the medulla. Some drams of serous fluid at once escaped. A drainage-tube was then passed along the probe and left in position. It was found that the fluid passed very slowly along it. The dura was then sutured, and the fragmented disc of removed bone replaced, room being left for the drainage tube. The flap was adjusted with horse-hair sutures, and the wound was covered with cyanid dressings. The child bore the operation well. The wound discharged rather freely, and the optic neuritis gradually receded. On the eleventh day the wound appeared to be breaking down, and the stitches were removed, presenting gelatinous-looking granulations, in which, however, no specific elements were found. Neither was it possible to find tubercles or hæmorrhages in the choroid. The drainage-tube was removed on the eighteenth day, and the child was well at the end of a month. Although, in view of the fortunate result, it is admitted that the evidence is not conclusive, it is nevertheless maintained that the case presented the classic picture of tuberculous meningitis, a diagnosis which was concurred in by all of the eight medical men who saw it before operation. — *Medical News*.

The Safranin-Reaction in Sputum as an Aid to the Differential Diagnosis of Pneumonia from Bronchitis.—The affinity of mucin for the anilin dyes, pointed out by Flemming,

Schiefferdecker, Hoyer, and others, led S. Schmidt some time ago to suggest a method of differentiating pneumonic from bronchitic sputum by means of the stain of Ehrlich-Biondi, consisting of a mixture of methylene-green, acid fuchsin, and orange G. According to Schmidt, a piece of sputum the size of a pea was shaken in a test-tube with a two and one-half per cent. solution of bichlorid of mercury in alcohol until it was broken up into fine particles; the alcohol was then carefully poured off, and the fixed sputum treated with the diluted triple stain. Sputum which contained large quantities of mucus turned the mixture greenish-blue, while pneumonic sputum changed the color to red, a mixture of the two giving rise to a dirty-violet tint. The reaction has been attributed by Renk, Kossel, Starkow, and others, to the predominance of albumin in pneumonic sputum and of mucus in the sputum of simple bronchitis, and this is probably the correct explanation. The test is a microscopic one and has been manifoldly confirmed, but it is not always reliable, as the reaction is obscured when there are many cellular elements (leucocytes, epithelium) present.

Zenoni ("Ueber Farbenreaktionen des Sputums," *Centralbl. f. innere Med.*, 1894, No. 12) claims that the method which he suggests does away with this difficulty, and, moreover, is an improvement on the old, as his test adds to the naked-eye appearances the possibility of increased precision by means of microscopic examination.

He spreads out a piece of the sputum to be examined on a cover glass, leaves it in strong alcohol for a quarter of an hour or more until coagulated, and then stains with a half-saturated aqueous solution of safranin. The cover-glass is examined on a white ground; if mucus (bronchitis) predominates the color will be distinctly yellow, if albumin (pneumonic diseases) is in excess the color will be red. The reaction of safranin with mucus occurs so quickly and sharply that there can be but little doubt that a definite chemie combination takes place.

Bizzozero was among the first to observe this peculiar metachromatic action of safranin, when studying the tubular glands of the stomach and intestine. Zenoni has tested the reaction on various mucoid and albuminous substances, and