

recordings of intra-cystic pressure. It was found in all of 23 tests that the injection of angiotonin into the femoral vein in doses of 0.26-0.64 mg per kilo of body weight caused a prompt contraction of the gall bladder (Fig. 1).

Duodenum. In their original publication Page and Helmer¹ demonstrated that angiotonin would stimulate the tonus and peristaltic motion of isolated strips of rabbit ileum. We have determined whether such an effect could be demonstrated in the intact animal. In 15 dogs the distal segment of the duodenum was exposed and a finger-cot balloon was inserted into the lumen through a stab wound. This was fixed with a purse string suture through the serosa and attached to a water manometer. Tonus and motility were recorded upon a kymograph. It was found that the intravenous administration of angiotonin in doses of 0.15-0.52 mg per kilo of body weight resulted in a marked increase in both tonus and peristaltic activity (Fig. 2).

Control tests using renin and "activator" solutions separately were uniformly ineffective in all of these tests. In addition, it was observed that neither atropine sulphate (0.2 mg per kilo) nor ergotoxine (0.15-0.3 mg per kilo) inhibited the action of angiotonin upon the gall bladder or the duodenal musculature.

Conclusion. Angiotonin stimulates contraction of the isolated gall bladder of the guinea pig and of the *in situ* gall bladder and duodenum of the dog.

11906 P

A New Form of Virus Pneumonitis Occurring Epidemically Among Newborn Infants.

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A number of reports in the recent literature have called attention to the occurrence of pneumonia in atypical form suggestive of a virus etiology. However, none of them, excepting that of Goodpasture, Auerback, Swanson and Cotter¹ refers to virus pneumonia occurring in infants. The latter authors described pathological changes characteristic of a virus infection of the lungs in 5 babies (ages varying

¹ Goodpasture, E. W., Auerback, S. H., Swanson, H. S., and Cotter, E. F., *Am. J. Dis. Child.*, 1939, **57**, 997.

from 2 weeks to 2½ years), dying from pneumonia secondary to measles or whooping cough. These cases occurred sporadically over a period of several years (1931-1938). The most notable feature of the pathology described was the occurrence of intranuclear inclusion bodies in the affected lung tissue.

The present report deals with a distinctly different and hitherto undescribed form of primary pulmonary disease occurring epidemically among infants in a newborn nursery. Its peculiar symptomatology, epidemiology and pathology indicate the virus nature of its etiology. Characteristic *cytoplasmic* inclusion bodies were found in the epithelial cells of the bronchial tree in all of nine cases terminating fatally. Data pertaining to the clinical course, the epidemiology and the pathology of the disease as observed in the first of 2 small epidemics occurring in Minneapolis and St. Paul are summarized here.*

The disease was characterized by its high degree of contagiousness, by the constancy of the clinical picture from case to case and by the fact that susceptibility was apparently limited to very young infants. While all of the 32 babies exposed to it contracted the disease, not one of their mothers or one of the adult attendants did so. In those cases in which it was possible to ascertain the date of exposure, it was observed that clinical signs of illness appeared after an incubation period of approximately 7 days.

Cough, dyspnea, cyanosis and low-grade fever, often biphasic in character, were the outstanding clinical features. In the average case the intensity of these more obvious signs contrasted sharply with the almost insignificant findings from percussion and auscultation. Roentgen ray examinations of the chest revealed patchy densities indicative of bronchopneumonia.

Nine, or approximately 28% of the 32 infants contracting the disease died. Death appeared to be due to the disease itself in all but one case in which empyema and staphylococcus abscesses of the lung complicated the original infection. The most striking pathological changes found on postmortem examination were those in the lungs. Grossly the affected lungs appeared acutely congested, and scattered, somewhat raised and often hemorrhagic areas stood out on cross section. Thick, ropy mucoid exudate partially filled the bronchial lumen.

Microscopically the exudate was seen to consist largely of slough-

* Biological studies of the virus, now being carried out in collaboration with Dr. R. G. Green and Dr. C. A. Evans of the Department of Bacteriology, will be published at a later date.

ing epithelial cells. The bronchi showed areas of necrosis and ulceration with partial collapse of the finer bronchioles and widespread atelectasis. The characteristic cytoplasmic inclusion bodies were found in the epithelial cells of the bronchial tree in all 9 of the fatal cases. In 5 the inclusions were found in the cells within the alveolar spaces. With the hematoxylin and eosin stain the ground substance of the inclusions appeared homogeneous, staining bright red or acidophilic. The diameter of the bodies varied from 3 to 6 microns. A clear halo was noted about the body in many places, and small vacuoles were seen within the ground substance of several inclusions.

The serum of ferrets, which were inoculated with fresh frozen lung specimens, failed to show any antibodies capable of neutralizing influenza virus.†

Repeated examinations of the bronchial exudate showed type specific pneumococci in but one of the fatal cases (type XXVII) and in but 6 of the cases surviving (4 of type XXIII and 2 of type XXVII).

Summary. A new form of primary, acute pneumonitis of infants is described. The disease is characterized by its predilection for young infants, its epidemic nature or high degree of contagiousness, the constancy of its symptomatology from case to case and its pathology, including the occurrence of typical cytoplasmic inclusion bodies in the epithelial cells of the bronchial tree.

11907

Anesthetic Effect of Steroid Hormones.*

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In the course of our experiments on the physiology of steroid hormones, we were surprised to note how difficult it is to produce acute overdosage phenomena even if enormous doses are given. Thus even a single subcutaneous injection of 100 mg of testo-

† The author is indebted to Dr. Thomas Francis, Jr., for carrying out this test.

* The expenses of this investigation were defrayed through a grant in aid received from the Schering Corporation of Bloomfield, New Jersey. The author is also indebted to Dr. A. D. Odell of Charles E. Frosst and Company for the androsterone, to Dr. Stanley Cook of Ayerst, McKenna and Harrison, Ltd., for the pregnanediol, and to Drs. G. Stragnell and E. Schwenk of the Schering Corporation for all the other steroids used in this investigation.