syncrasy of the bird toward ether make it take the anesthetic well.

While we have made no detailed physiologic study as to the fundamental reasons underlying this difficulty respecting anesthesia which has been described, it seems reasonably apparent what these reasons are. Connected with the respiratory organs proper of a bird are the relatively enormous air sacs. During anesthesia the ether or chloroform vapor gets into these air sacs either by diffusion or directly as a result of respiratory movements. There is reason to believe that the vapor, once in the air sacs, stays there until it is absorbed by the tissues; in other words, it appears to be the case that the great bulk of an inhaled anesthetic in the case of birds must be eliminated from the body by way of the urinary organs rather than the respiratory organs. Assuming this to be the case there is no difficulty in seeing why forcing an anesthetic in a bird leads to disastrous results. The relatively enormous area for absorption afforded by the air sacs insures that a correspondingly large amount of the anesthetic will be taken up very quickly. This almost immediately affects the vagus center, with the consequent cardiac inhibition, respiratory failure and death.

In attempting to overcome this difficulty a considerable number of experiments were tried with indifferent success. Nearly every method of anesthesia which has been advocated was tried. From the glowing reports in the literature we were led to hope that scopolamin-morphin might prove to be the desired thing. A series of experiments with these drugs, in which various doses ranging from very small to very large were thoroughly tested, failed to yield satisfactory results. We found it impossible to induce satisfactory surgical anesthesia in fowls by injecting scopolamin-morphin. After various failures we finally began the routine use of atropin sulphate in connection with the anesthetic. Our idea was that if at the same time that the anesthetic was given to the bird some substance could also be given which should have the effect of neutralizing partially or completely the poisonous action of the anesthetic without destroying its anesthetizing effect it would then be possible to give the bird sufficiently large doses to attain the desired surgical condition without killing it. Now it is a well-known fact¹ that atropin is antagonistic in its pharmacologic action to substances like chloroform and ether. The suggestion was at once obvious that if atropin were not antagonistic to these other drugs in respect to anesthetic action, the poisoning might be obviated without disturbing the anesthesia by injecting into the organism, when the anesthesia was begun, a certain amount of atropin. The use of this drug in connection with chloroform or ether anesthesia has been advocated,² but, so far as we can learn, only to a very slight extent practiced.

This scheme of anesthesia was carried into effect in our work with birds in January, 1908. It may be said at once that the results from its use have been successful beyond anticipation. In our work we have kept birds on the operating table under the influence of the anesthetic for three or four consecutive hours, and at the same time carried on extensive surgical manipula-

tions without the least ill effect from the prolonged inhalation of the anesthetic. Not only do the birds which have been given atropin in connection with the anesthetic survive prolonged and deep anesthesia, but they are in much better condition for the operation than those not so treated. Relaxation is complete and reflex activity disappears. A preliminary injection of scopolamin-morphin (morphin sulphate 1/3 gr., scopolamin-hydrobromide 1/75 gr.) we have tried in the place of atropin sulphate. The resulting anesthesia with ether is better than when the ether is used alone, but in our experience it is not so satisfactory as when the atropin is used.

The exact method of procedure which we now follow in anesthetizing birds is as follows: Immediately before beginning the administration of the anesthetic a 1/200 grain atropin sulphate tablet is dissolved in 1 c.c. of warm normal saline solution. The salt solution with the dissolved atropin is then injected subcutaneously in the axilla. Ether is used as the anesthetic. It is administered from a small improvised mask which admits of the condition of the comb being seen during the operation. Depending on how hard the ether is pushed, the bird is ready for operation in from fifteen to twenty minutes after the anesthesia is begun. The dosage of 1/200 grain atropin to a bird may seem large, but we have never been able to see the slightest bad effect from it, provided the administration of ether was begun immediately after the injection of the atropin.

DIAGNOSIS AND TREATMENT OF CATARRHAL PNEUMONIA COMPLICATING INFECTIOUS DISEASES OF CHILDHOOD

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The statistics of the various boards of health in the large cities of the United States show clearly the danger of the pulmonary complications of infectious diseases in childhood. In New York City, during the week ended Jan. 4, 1908, 581 cases of measles were reported to the health department, with 32 deaths, and if it is remembered that the majority of these deaths were due not to the disease *per se* but to the lung complications, it will be seen that these constitute an important factor in the management of the case.

The danger is in direct proportion to the size of the bronchi affected. When only the large bronchi are involved the danger is comparatively small, but as soon as the inflammation extends to the bronchioles, with exudation into the alveoli, the situation becomes serious.

The physical diagnosis of these conditions is not easy. The bronchopneumonia following bronchitis can be diagnosed only if the amount of healthy lung tissue is not large enough to mask the infiltration; in other words, if there are many infiltrated spots spread over the lungs, symptoms of bronchitis may be made out by auscultation, and the extremely rapid respiration will tell more than the ear.

The danger and prognosis in these cases may be just as grave as in cases in which there is perceptible flatness on percussion. Therefore, I always base my prognosis on the pulse, respiration and general facial expression rather than on the percussion and auscultation of the child's thorax. Sometimes, no matter how careful I have been in examining a child, I could hear nothing but signs of a general catarrhal condition of the larger

1. Cushny, A. R.: Text-Book of Pharmacology, pp. 285-289.
2. Cushny: Text-Book of Pharmacology, p. 175. Schäfer, E. A.: Artificial Respiration in its Physiologic Aspects, THE JOURNAL A. M. A., Sept. 5, 1908, II, 801. Schäfer says: (*loc. cit.*, p. 803): "Both these dangers are obviated by the hypodermic administration, prior to the operation, of a small dose (1/50 grain) of atropin sulphate. It seems strange that anesthetists do not generally adopt this simple precaution as a routine method."

bronchi, and yet the rapidity of respiration already showed the existing deeper involvement.

In the majority of my cases the bronchopneumonic infection was nearly always well developed before I had a chance to see the patients. In measles and whooping cough the physician is generally consulted when additional trouble has been existing several days. If called early, and then only, I have always used syrup of ipecac in teaspoonful doses, repeated often enough to produce copious vomiting and then stopped. It has seemed to me that a large depletion of stomach contents acts, probably reflexly, on the obstructed channels of the lung.

In treatment of children I advocate hydrotherapy. There is such a broad field for cold and hot water in the treatment of the sick child that it seems strange that physicians do not avail themselves of this handy and, if used with common sense, effective remedy.

If the child has high fever I use cold water applications, having the water the same temperature as the room, in the following manner: A long towel is folded so that when wrapped around the child it reaches from the axillæ to the navel. It is then dipped into water, well wrung out, and put around the child; then a flannel cloth, broad enough to cover the towel, is put over that. A fresh application should be made every hour or two, but the child must not be disturbed while it sleeps, a fact which must be impressed on the parents.

In strong children water colder than the temperature of the room may be used. Very often in connection with this I recommend hot baths twice daily, of five minutes duration each time; these I find are always followed by a good rest.

If there is very little rise in temperature, especially in cases of whooping cough complicated with bronchopneumonia, I frequently apply warm water to the chest, putting a piece of oil silk between the towel and the flannel, but here extreme care must be taken to avoid infection of the skin, which happens occasionally when oil silk is used between the layers; and it is necessary to apply a mild ointment or cold cream to the skin of the thorax to avoid furuncles or eczema.

So far as medication is concerned, physicians can not boast of much success in influencing these conditions. Of the modern products the guaiacol and creosote preparations have some value. It is my practice to order, according to age:

R.	gm.	
Creosoti carbonatis	1 to 4	or grs. xv to 3i
Sacchari alb.		
Mucilago acaciæ, ãã.....	q. s. 90	3iii
M. et fiat. emulsio cum aqua destillata.		
Sig.: One teaspoonful every two hours.		

This is readily taken by the sick child and may be continued at intervals for some time without untoward results.

In desperate cases I have used mustard applications, recommended by Heubner of Berlin, occasionally with surprising results.

I quote from him as follows: Take a pound of mustard flower and to this add a quart and a half of warm water, stir until the odor of mustard is perceptible. A towel is dipped into this mixture, wrung out, and wrapped around the child from the shoulders to the feet, and then a woolen blanket is put over this. The neck must be well covered so that the mustard does not affect the eyes and lungs. The child stays in this dressing for from ten to thirty minutes, or until the skin is red. It is then washed with lukewarm water, after

which a bath of five minutes duration in lukewarm water is given. Then a moist warm towel is put around the chest. This procedure may be repeated the next day. Sometimes the result is surprising, and a life despaired of may be saved.

Fresh air is, of course, a *conditio sine qua non*, and while I have not much experience with the cold air treatment of pneumonia, yet I think that the happy medium will apply here as well as in other diseases.

In conclusion I would like to say once more that medication plays an inferior rôle in the treatment of these, if I may call them so, infectious pneumonias of childhood, while hydropathic procedures, as mentioned above, in connection with a generous liquid diet of milk, broths and eggs, will succeed in saving many a child who seems to be at death's door.

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Therapeutics

ACNE

This troublesome condition or disease, which is so frequent in adolescence and may so many times persist for years, should always be taken seriously. The family physician is more and more frequently consulted early in the disease, and too frequently dismisses the young patient with some recommendation or treatment that is very likely to prove ineffectual. Possibly the increased dust and dirt of our cities causes an increased tendency to the formation of comedones and subsequent acne indurations by quickly coating and sealing the little sebaceous ducts of the face, especially if, as is frequently the case, the patient has a profuse oily secretion.

It is not the purpose of this article to describe all the preparations or local treatments that may or should be used for facial acnes, but to urge, in the beginning of such troubles, a careful investigation of the patient's digestion, general health and habits, as we know that metabolic disturbances (which are so often present during adolescence) and preventable gastrointestinal indigestion are often the primary causes of acne. Also a carelessness and an actual lack of cleanliness, or improper hygiene of the face, is frequently the cause of the development of comedones and acne.

The young boy and young girl, especially in their early teens, are very careless as to the movements of the bowels. Constipation is the bane of America, and its beginning is generally traceable to gross neglect during this period of life. The young child is carefully watched by its mother and the condition of its bowels is known. The boy or girl of 15 is not so watched, and both attending schools, later colleges and seminaries, or hastening to stores or factories, think they have not time to attend to this call of Nature directly after breakfast, the physiologic time for a bowel movement. Young boys and girls go to bed too late, and dislike to arise in the morning until the very last moment, and then have not time to attend to this necessary function.

They also, because of this lack of time, swallow their breakfasts almost without chewing. This is especially true with mushy, gelatinous cereals, and particularly true of oatmeal. Consequently oatmeal in gummy, sticky, gelatinous masses, the manner in which it is mostly eaten, although considered one of the most nutritious of foods, becomes the most frequent single cause