

the well known fact, that a small piece of gum acacia, gelatine, preparation of potash, etc., or even a glass bead, a button or any other perfectly tasteless substance held in the mouth, will favor expectoration, especially when the bronchial secretion is viscid and tough. I said these agents act in an apparently mechanical manner, as is proved by the fact that a glass bead will have a similar, though not so powerful, effect, to that of a piece of sal ammoniac. No doubt they act reflexly; the impression being produced upon the terminal branches of the glosso-pharyngeal, or the lingual branch of the fifth nerve, carried to the medulla, and hence either through the branches of the vagus or through the sympathetic system to the bronchial mucous membrane, in which it may affect secretory or nutritive changes, or more probably both. As such nerve stimulation is supposed to increase the action of the cilia, thereby sweeping up the tough viscid mucus to the back of the pharynx or top of the larynx, whence it may be easily expelled, such remedies have been termed ciliary excitants.

They are constantly used in the form of compressed tablets, made by various firms of manufacturing chemists, and it is worthy of remembrance that they do not act by absorption, though sapid substances are more useful than tasteless ones, for the reason that they produce a more powerful impression upon the nerves of the tongue and mouth, and hence reflexly act more powerfully upon the cilia of the bronchial mucous membrane.

To revert to the others, which I have said do not really rank as expectorants under the definition, as time will not permit me to dwell upon the class of anti-spasmodics, such as lobelia, stramonium, opium, etc., but I may mention a few points in regard to those which soothe the irritable respiratory centre or the nerves connected with it, *i.e.*, pulmonary sedatives, such as morphia, chloral, hydrocyanic acid, hyoscyamus, etc. Of these the chief is morphia or opium. It has a double action, *viz.*, that of lessening excitability of the respiratory centre and of diminishing the bronchial secretion; in both ways, as will be readily understood, relieving the cough. I think there can be no doubt that opium in one of its preparations, most frequently the ubiquitous paregoric, is given far too frequently in

cases of respiratory troubles, as an easy means of burking the cough, if I may be allowed the expression, and letting nature do the rest; the cough being to the patient the *fons et origo malis*. This plan of treatment is surely most injudicious, and may be responsible for much of the chronic disease of the lungs we see on every hand. In many, indeed in most cases, the *vis medicatrix nature* is competent to restore the pulmonary tissue to a condition of health, in spite of the bungling attempts of man, which, intended to aid nature, really hinder her.

That opium has a decidedly useful and important rôle to play in the treatment of chest affections is certain, but it is equally certain that its routine and indiscriminate use, simply to get rid of the cough, is quite as silly and quite as harmful as is the use of Mrs. Winslow's Soothing Syrup, or any of the baby comforts that are on the market, by mothers, who, either in ignorance, or regarding their own comfort more than the welfare of their offspring, soothe the symptoms of the disease by plying these narcotics. Verily they sow the wind to reap the whirlwind.

The indications for the use of opium in pulmonary troubles are not many. I have endeavored to group the chief ones, which may be briefly stated as follows: first, in those cases in which we have to deal with fits of coughing, when the exciting cause will not admit of expulsion. Here the futile attempts at expulsion and imperfect respiration produce great exhaustion, and may require the aid of an anodyne, of which the most powerful is opium. Congestion or consolidation of the lung tissue; calcareous nodules found embedded in the lung; and aortic aneurism would be examples of such conditions. Again, there may be much cough with little or no expectoration. The lining membrane of the air tubes is irritable and "raw," there is no increased secretion, and yet the cough will be pretty continuous and very distressing, but quite useless. The congestion is great, requiring decided medication with some of the depressant expectorants, and at the same time the futile, wearing, exhausting cough, will be best allayed by opium in some of its forms. Again, when secretion has become too copious, either from the administration of the depressant expectorants or in the natural course of the disease, opium may be used, not so much to