

## TWILIGHT SLEEP.\*

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During the past year there has been a great deal of interest aroused in the popular mind in regard to the use of certain drugs to lessen the pains of child-birth by the production of the condition known in this country as "Twilight Sleep." It would seem from the sudden interest taken in the subject that the method was a development of only the past few months, but, as a matter of fact, the use of nonvolatile drugs in labor dates back several years, to 1902, and is preceded by their use in general surgical work.

It was in 1900 that Schneiderlin, desiring to reduce the amount of chloroform which it would be necessary to give for an operation for cancer, preceded the administration of the chloroform by an injection of morphine and scopolamine. The results were so satisfactory that later on he increased the amount of these drugs, dispensing with the chloroform entirely. The doses used were quite large, even up to 1 1/6 grains of morphine and 1/25 grain of scopolamine in 1/4 hours, and he advised that in case of hurry a dose of morphine 1/2 grain and scopolamine 1/60 grain be given. He published his results in ten cases, and recommended the method highly as he considered it perfectly safe.

Two years later Bloss published the results he had obtained in 105 cases, in which series there had been one death. Following these papers, the method was extensively used in general surgical work, but as statistics showing its dangers were gradually gathered, the method quite rapidly fell into disuse.

It was in 1902 that Von Steinbüchel suggested its use in obstetrics, and in his second paper he gave the details of its use in twenty cases. He used doses of 1/6 grain morphine and 1/200 grain scopolamine, which doses he said might be repeated if necessary. In contrast to Schneiderlin, the papers of Von Steinbüchel were very cautious in their tone. In the next few years the use of these two drugs in obstetrics was tested in many of the European clinics, and after a more or less extensive trial the method was given up in practically all of them. In Freiberg, however, the procedure was still used and further developed until the Freiberg method or some slight modification of it has come to be the one most generally recognized in this country.

One of the drugs which has been used is Scopolamine (which has also been named Hyoscine), an alkaloid found in *Scopolia atropoides*, *Hyocyamus niger* and other plants of the Solanaceæ. It is optically active, rotating polarized light to the left. Straub's scopolamine contains mannite in order to prevent deterioration. The other drug used is morphine or some substitute which has been introduced for it. In some clinics pantopon, a mixture of all the opium alkaloids introduced by Sahli, has been tried, but it has not given much satisfaction as it has been found to be too toxic.

More recently Narcophen has been introduced and it is being extensively used. This drug is a mixture of the meconate of morphine together with the meconate

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of another of the opium alkaloids, narcotine. About one-third of the weight of Narcophen is morphine. This preparation is the one now being used in the Freiburg clinic.

Briefly stated, the method is as follows: The first injection of narcophen  $\frac{1}{2}$  grain and scopolamine  $\frac{1}{150}$  grain is given as soon as labor is well established as shown by the fact that the uterus is contracting for about thirty seconds every four or five minutes. Three quarters of an hour after the first injection, a second is given, this time of scopolamine alone— $\frac{1}{150}$  grain. The further dosage varies for each patient and is determined by repeated memory tests. This test is carried out half an hour after the second dose by showing the patient some object, or by asking the patient, for instance, how many injections she has had, or some such question, and making note of her answer. Her memory is tested twice again in like manner by showing the same object or asking the same question at intervals of half an hour; and if after the second test the memory is still retained, a third injection of scopolamine  $\frac{1}{200}$  grain is given. Further injections of scopolamine are given as necessary in order to maintain the desired end, which is the abolition of memory. The pains are perceived by the patient, at the time, but upon awakening afterwards she has no recollection of them. It is also true that in a very considerable percentage of cases there is a very distinct lessening of the pain itself.

As to the advantages of the method, it may be said that in about seventy percent of all cases there is not only loss of memory of the pain of labor but also relief from the suffering. In about ten or twenty percent more there is no loss of memory but only some relief from the pain, and in the rest of the cases the method is a failure.

In regard to the disadvantages, one of the first which may be mentioned is the complex technic necessary. It is practicable to carry it out only in a hospital, as constant attendance and absolute quiet are essentials. If it is to be done in a private home, it means the transporting of physician and one or two nurses to the house for the entire time of labor. The patient must be watched very carefully, and the child requires constant attention as its heart rate must be counted every fifteen minutes in order that labor may be terminated quickly by operative measures in case the child is discovered to be in danger.

The second stage of labor is apparently prolonged, causing increased danger to the child and making it necessary to use forceps more frequently. And finally as to the danger to the child, there seems to be no doubt but that more frequently than normal it is hard to get the child to start breathing. This applies not only to cases of true asphyxia but also to the condition known as oligopnea in which the respiratory movements are much interfered with for some little time after birth, due to the depressing action of the two drugs.

Many reports are being published which are very favorable to the method, but it is also true that there are in addition reports of the deaths of a number of infants for which no other explanation could be given, than that the drugs used in the production of the twilight sleep were responsible for them.

To summarize, it may be said that it is probably true that the condition of Twilight Sleep is in no way harmful to the mother, but that it is believed today that it involves some increased risk to the child.