causing abscesses, and when carried in the pocket for months being in as perfect condition for use as when freshly prepared: Take four fluid ounces of boiling distilled water, add two grains of salicylic acid and sixty-four grains of sulphate of morphia; stir with a glass rod until they are dissolved. Filter through coarse filtering paper, while hot, and keep in a glass stoppered bottle, of green glass. Prof. Luton, of Reims, uses cherry laurel water as a menstruum; he claims that it will keep indefinitely.

The dose of morphia, according to Bartholow, "varies from one-twelfth to one-half a grain. *In commencing, it should not exceed one-third of that ordinarily administered internally.*"

I use twelve to twenty minims of Majendie's solution as a single injection.

The immediate effect of the injection is a smarting, sometimes, pain, in the part. At times this amounts to only an itching. There is a sense of heat and of fullness in the head, and where the injection has entered a vein, a giddiness and singing in the ears. In some cases there is nausea. "Loud borborygmi not unfrequently occur at the moment the cerebral symptoms are perceived." Walking becomes difficult; the face is flushed, mouth and tongue dry; the hearing is more acute than normal. After a variable length of time, the pain, for the relief of which the injection was given, disappears, and the patient either goes to sleep or lies in a state of calm repose. Dr. Hunter has remarked the effect of this treatment in lowering the pulse in acute mania. He also observed the diminished rate of respiration. Bartholow, in his work, cited previously, presents a diagram of the pulse, temperature and respiratory movements, and also sphygmographic tracings.

Cutaneous irritation, especially itching of the nose, is developed, and diaphoresis usually follows. Should the injection be administered after a full meal, digestion is suspended for several hours. Constipation generally results; the kidneys secrete less urine, and there is some difficulty experienced in urination. Bartholow claims that there is a diminished secretion of bile, whereas Dr. Rutherford, in the *British Medical Journal*, February, 1879, "has found by experiment on the dog that morphine sub-cutaneously injected has no effect on the secretion of the bile." Some patients experience headache and nausea as the effects of the medicine pass away. In other cases there is a rambling conversation, and still in others delirium. The effect passes off in about sixteen to twenty hours, although I have seen cases where it lasted for thirty-six hours. M. Calvert (Thèse de Paris, 1877, Etude Experimentale et Clinique sur l'Action de la Morphine) presents: 1. A physiological research of the action of morphine upon the various functions of the organism. 2. A clinical study of morphine as a therapeutical agent, especially in the relations of acute to chronic morphinism. In the first, he observes that both intravenous and subcutaneous injection of the hydrochlorate of morphia accelerate respiratory movements, this acceleration being followed by a period of retardation, and sometimes a momentary arrest or respiratory syncope. The same relative effects occur with the cardiac movements. During this time animal heat exhibits analogous phenomena, namely, the elevated is followed by lower temperature. In fact, the absorption of morphia by subcutaneous injection produces a very marked influence upon the reflex actions.

In 1879 I injected twenty minims of Magendie's solution into the arm of a lady, about thirty-two years of age, to whom I had given hypodermic injections previously. The patient was accustomed to take half-grain doses of morphia by the mouth, which accounts for my giving this unusual dose. I injected into the arm above the elbow. In three minutes she appeared to be under the full influence of the drug, perfectly relaxed and speechless. The patient resided in the country, and I did not visit her until the second day after the injection. The attendant reported that she had remained in the comatose or stupefied condition, in which I had left her until a short time before my arrival; that is, the stupefied condition lasted about forty hours. I examined the patient; she was free from pain, but extremely prostrated. I would note the fact that there had existed complete inactivity of the kidneys. The case progressed favorably.

Dr. Lorent reports a case of deep narcotism following the injection of morphia. "The patient was a delicate male, forty-three years of age, suffering from delirium tremens; one grain of morphia was administered. The pupils were so contracted as to appear entirely closed. There was perfect insensibility to pricking with a needle. The pulse was very slow, and respiration sank even to six in the minute, so that, fearing a fatal termination, artificial respiration was maintained. The threatening symptoms, however, soon subsided, and from the favorable termination of the delirium tremens which soon followed the large dose seemed to have exerted a good influence.

Dr. E. T. Wilson, in an article in the *British Medical Journal*, May 24th, 1879, complains that, in a number of cases, his patients have been peculiarly affected. Scarcely has the fluid entered beneath the skin when the most intense feeling of irritation and pricking is felt in the part, spreading from the puncture rapidly all over the body. At the same time the skin becomes suffused with a bright blush. The heart's action then becomes greatly quickened, and there is a throbbing, rushing feeling through the head. The hands were somewhat swollen and the lips had a glazed appearance. In one case the patient became rapidly unconscious as if knocked down by some sudden shock. The symptoms subsided gradually, leaving behind great pain in the head.

In a communication to the *British Medical Journal*, March 2nd, 1872, Dr. Hausmann ex-