

A NOVEL PROCESS FOR USING BLUE LIGHT AS AN ANÆSTHETIC.

BY DR. ALFRED GRADENWITZ.

Until a few years ago the only method available for rendering the human body insensitive to pain was that of general anæsthesia. The disagreeable and oftentimes highly prejudicial effects of the substance producing insensibility have recently led to the use of local anæsthesia, bearing only on the part directly concerned by the operation. This is rendered insensible by an injection of cocaine or the like, and so highly has this process been improved of late years, that even extensive operations may now be effected by its help, without rendering the patient unconscious.

There are, however, many cases where general anæsthesia cannot be dispensed with, and it is gratifying that even in this direction the modern methods are being more and more developed, any injurious effects being avoided as far as possible by suitable precautions. Ether may be used to advantage instead of chloroform, especially in connection with dental work, but even this anæsthetic is not free from the bad points above referred to. Apart from the danger of giving rise to illness, there is further a rather disagreeable and prejudicial state of excitation previous to insensibility, which, especially with hysterical persons, is a serious drawback to the use of this method.

Prof. C. Redard, of Geneva, Switzerland, has made an interesting observation which he was able to utilize with a view to improving the present methods of anæsthesia.

It is a well-known fact that any external impressions received during the period of somnolence, and even any outside influence during sleep, have great bearing on the dreams attending the latter. Now as, with artificial anæsthesia, the body is left to the influence of any external factors outside of the control of the will to a far higher degree than during ordinary sleep, the possibility of controlling the production of anæsthesia by outside impressions and preventing any disagreeable phenomena that may attend it, should appear plausible to anybody. In fact, it had long been known that external impressions exert a great influence on the period of excitement observed both at the beginning of insensibility, as well as on awakening. Prof. Redard therefore had the idea of utilizing music, when in most cases any disagreeable excitation was

found to be replaced by a feeling of well-being. The awakening is also quite free from excitement, there is no nausea, and any disagreeable effects are either avoided or will disappear rapidly, whereas, with ordinary chloroform or ether operations, the feeling of illness is known to last for a very long time. It should be mentioned that the kind of music used at the moment of anæsthesia need not be really artistic; in fact, an ordinary musical box seems to be quite suitable to

red, yellow, and other rays did not show any result, while green and violet lights, most nearly related to blue light, were found to be also efficient, though to a smaller degree.

The experimental outfit for this anæsthetic process is a rather simple one, a 16-candle incandescent electric lamp, a nickel-plated reflector, and a blue veil being sufficient. The lamp is fitted with a blue bulb and placed at about 6 inches from the eye, this being the point of convergence of the light rays, while the head of the patient as also the lamp itself is covered with the blue veil to avoid any stray daylight. Two or three minutes' action is sufficient to allow of the extraction of a tooth without any pain.

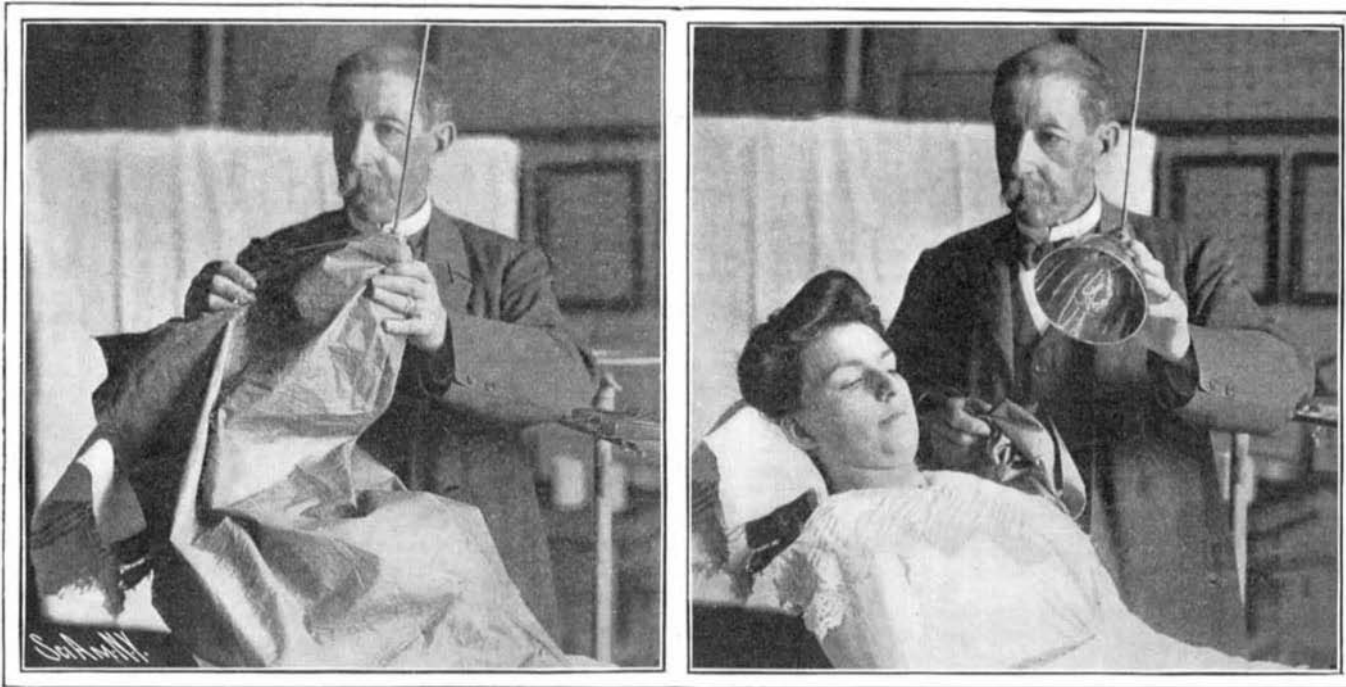
There is one point which apparently remains doubtful. Prof. Redard does not state whether the person rendered unconscious by his process is in a state of sleep, either natural or hypnotic; but according to the process itself, it would seem as though there were

a kind of hypnotic sleep, disappearing, however, without any prejudicial effects, the moment the operation is finished and the action of the blue light discontinued, when the one experimented on seems to awake and states that no pain has been experienced.

THE NEW BRITISH BATTLESHIP "KING EDWARD VII."

The accompanying illustration of the latest type of British battleship, known as the "King Edward" class, should have particular interest for Americans, for the reason that she is the first ship in the British navy to make use of a certain disposition of armor and guns which has long found favor with our own naval constructors. In all British battleships, built during the past two decades, the armament has consisted of four big guns, first of 13½-inch, and later 12-inch caliber, and a secondary battery of 6-inch guns, the secondary

battery being disposed amidships in protected casemates. In our navy, commencing with the "Oregon" class, most of the battleships have carried, in addition to the 12-inch and 6-inch guns, a battery of intermediate guns of 8-inch caliber. These were generally disposed in four turrets, placed at the four corners of the secondary 6-inch battery. It is the possession of these 8-inch guns that distinguishes our battleships broadly from those of other navies. As regards the distribution of armor, we have always favored the use of a continuous wall of armor for the
(Continued on page 242.)



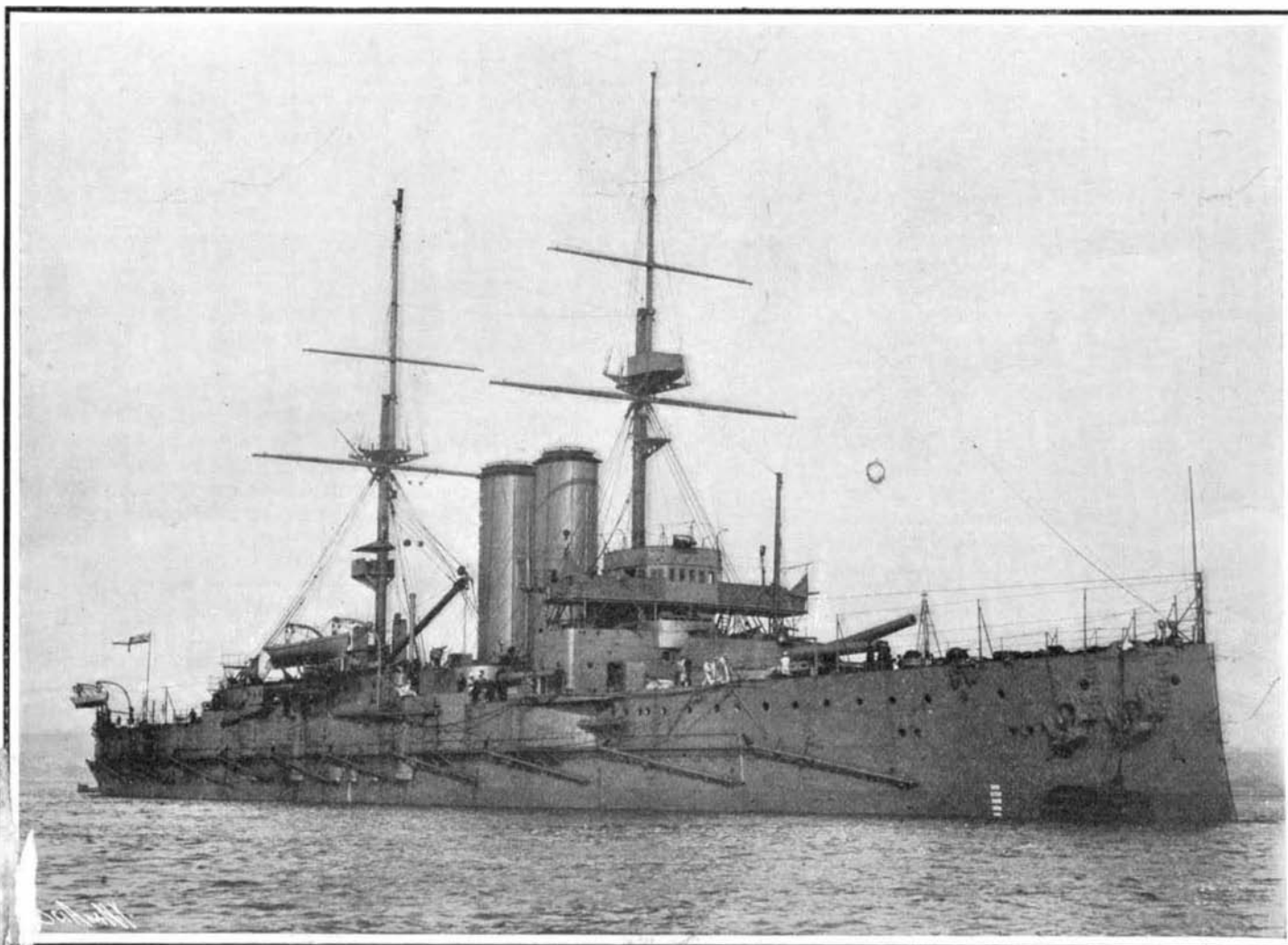
Covering Patient with Blue Veil.

Producing Anaesthesia with the Blue Reflector.

THE USE OF BLUE LIGHT AS AN ANÆSTHETIC.

produce the desired effects. The action of the music should commence at the beginning of anæsthesia, and be kept up to the moment of awaking.

A still more curious process, which will be found described below, was likewise discovered by Prof. Redard and has been used by him for more than three years. This is neither general nor a local anæsthesia, as obtained with anæsthetic substances, insensibility being produced merely by the action of blue light on the nervous center of vision, reacting most likely on the other nervous centers. All the experiments made by the Geneva professor go to show that blue has a decisive anæsthetic action. A great number of patients have been made unconscious by this means, and the results have been presented recently to the Congress of the Swiss Odontological Society, held this year at Lausanne, Switzerland. It should be mentioned that



Displacement, 16,350 tons. Speed, 19.04 knots. Coal supply, 2,000 tons. Armament: Four 12-inch; four 9.2-inch; ten 6-inch; fourteen 3-inch; fourteen 3-pounders. Armor: Belt, 9-inch; two decks, 2-inch and 1-inch; side armor of central battery, 8-inch and 7-inch; main turrets, 8-inch and 12-inch; secondary turrets, 7-inch. Torpedo tubes: Submerged, four. Complement, 800.

THE LATEST BRITISH BATTLESHIP "KING EDWARD VII.," ONE OF A CLASS OF EIGHT SHIPS.