

after noon, the following day, she was observed to be on fire, and in a short time an explosion occurred on board, followed, according to the statement of one witness, by "several more at intervals." The crew jumped overboard, and were all saved except the master, who must have jumped overboard on the port side where there was deep water and was drowned.

The court could not assign any cause for the explosion, but it was suggested that the vessel was fired by the master, either accidentally or designedly, in a state of insanity.

On the 6th March, an explosion occurred on board one of the tenders to the "Cambridge" gunnery ship, causing serious injury to three marines. The accident occurred during gun practice outside the breakwater at Plymouth. One charge had been fired, but in loading the second time, sponging was omitted, and the cartridge exploded prematurely, blowing out the vent piece. One man who was at the vent had his right hand smashed, necessitating amputation, and two other men were scorched on the face and hands. Plymouth.

A slight explosion occurred in the manufacture of cordite at Waltham Abbey, on April 22nd. An ignition took place in a cylinder which was being filled in the charging press, and which contained about 30 lbs. of cordite paste. About one ounce of the paste appears to have exploded, breaking the cylinder into four pieces, two of which were projected with some violence. Two persons were slightly injured. The cause of the ignition is uncertain. It is a remarkable fact that the bulk of the paste fell out of the broken cylinder intact, and that the cordite present in the building was not ignited. (See also a similar accident at Hayle, p. 36.) Waltham Abbey.

A fatal accident occurred at Lydd camp on the 19th June. Three gunners of the Royal Artillery noticed a shell which had been fired, but had not exploded. Despite a standing warning, they began to play with it, and it exploded. One of the men was killed, and the two others very seriously injured. Lydd camp.

Some Hull lightermen, on the 5th August, picked up an unexploded shell on Killingholme sands, which had been fired during artillery practice. A water bailiff was carrying it to throw it into the Humber, when he dropped it or threw it down, and it exploded, killing him on the spot, and also seriously injuring another man. Several other persons narrowly escaped. Hull.

FOREIGN EXPLOSIONS.

Following the practice of former years, we proceed to give a brief account of the more interesting foreign explosions which have come under our notice. As we have remarked in former reports, our information as to these accidents is necessarily very incomplete, and often gleaned only from brief notices in newspapers. Foreign explosions.

In some instances, however, through the courtesy of the persons concerned, through the Foreign Office, or from other sources, we have been able to collect details which are interesting and often valuable.

In the following list the countries are arranged in alphabetical order; and the more trivial explosions have been omitted.

South Africa.

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On the 28th November, an explosion took place in one of the underground magazines at the Leeuwfontein dynamite factory, fortunately without causing loss of life or personal injury. Leeuwfontein.

From an account, which has been gleaned from the local papers, it would appear that there were about 17 or 18* of these underground magazines in the factory, and the one that blew up was stated to have contained, at the time of the accident, about 1,000 cases of dynamite (probably 50,000 lbs.).

Considerable damage was done, but the explosion was confined to one magazine.

The cottages surrounding the factory were all more or less shaken, most of the contents being thrown on to the floor, whilst over 50 panes of glass were broken.

* Another account gives as many as 30.

their physiological attainments, between budding geniuses and imbeciles, a comparatively simple undertaking—they will also be saddled with the responsibility of determining the fate of that far more numerous class whose mental capacity verges on mediocrity. The diagnosis of disease is by no means an easy feat, but inasmuch as the physician has all the necessary data before him, in one form or another, he may not unreasonably be expected to arrive at a correct conclusion. When, however, he is called upon to prophesy, as it were, regarding such a very problematical affair as the future development of a child's brain, his judgment must to a large extent be based upon conjecture. Dull children not infrequently grow up into brilliant adults, and *vice versa*. On the whole we are inclined to think that this, the latest of pedagogical innovations, is not likely to turn out a conspicuous success.

ANOTHER EXPLOSION AT WALTHAM ABBEY.

WHATEVER may be the practical advantages of cordite for ammunition purposes, there still comes evidence, unfortunately, of the fearful risk run by those engaged in its manufacture. It is reported that an explosion took place on Monday afternoon last at the cordite works, Waltham, where a full charge of 28 lb. of cordite was being pressed in a hydraulic press, which appears to be the essential part of a new compressing process. Two men and three boys were injured, the injuries of one of the former being very serious. The cause of the explosion does not appear to be known, but we are loth to believe that the strictest precautions are not taken to avoid the least possible chance of accident. The latest accounts, however, state that the explosion was due to the cordite becoming dry, owing to the press being left open during a "shift" of workmen. The results of the slightest negligence in the operations concerned in the preparation of powerful explosives of this class may have so serious a consequence and so far-reaching an effect as to demand the strictest supervision. It will be remembered that since the occurrence of a series of disasters which befel the operatives in the cordite factories at Waltham during the last few years a committee appointed to inquire into the matter recommended certain important changes in the management and organisation of the manufacturing processes. We trust that these recommendations were acted upon without the slightest delay.

CHANGES IN THE BLOOD IN YELLOW FEVER.

A MOST valuable and instructive series of articles on the Natural History (Symptoms and Pathology) of Yellow Fever by Dr. Joseph Jones of New Orleans is at present appearing in the *Journal of the American Medical Association*. In the issue of March 16th the condition of the blood in this disease is considered. That the blood undergoes profound changes during the period of febrile excitement of yellow fever is manifest even to the casual observer in the impeded capillary circulation, purplish, jaundiced, and dusky hue of the surface, livid blotches, passive hæmorrhages from slight abrasions, blistered surfaces and hæmorrhages from the ears, eyes, mouth, gums, and gastro-intestinal mucous membranes, which in some cases are characteristic of the succeeding period of calm or exhaustion. The changes of the blood appear to be continuous from the time of the introduction of the poison to the fatal termination. According to Dr. Jones the alterations of the blood in yellow fever consist chiefly in: 1. Such an alteration of the chemical and physical properties of the fibrin and albumen as leads to the transudation of the latter through the excreting structures of the kidney. 2. Various degrees of alteration and diminution of the fibrous element. In some cases there is an almost entire disappearance of this

element. This disappearance appears to be due to the direct action of the febrile poison and not so much to the action of ammonia. From this alteration in the amount and character of the fibrinous element it results that the blood coagulates imperfectly and the clot is voluminous and soft. 3. While the red blood-corpuscles are very slightly diminished in yellow fever they present under the microscope certain peculiar appearances, which appear to be referable to the action of extraneous matters in the blood. 4. Increase of the extractive matters of the blood. 5. Increase of the fatty matters. 6. Accumulation of bile in the blood in consequence of the profound lesions of the liver induced by the febrile poison, and in consequence of the failure of the excretory function of the kidneys. Many of the changes of the blood, as well as certain cerebral symptoms, may be dependent upon the presence and action of the biliary constituents. The serum presents a golden colour, this being due to the presence of bile. 7. Accumulation of the urinary constituents, and especially of the urea and phosphoric acid, sulphuric acid, chloride of sodium, and carbonate of ammonia, in the blood consequent upon the profound lesions induced by the febrile poisons and its products upon the kidneys. 8. Rapid dissolution of the coloured corpuscles after the blood is abstracted from the body either during life or after death. 9. Rapid putrefaction of the blood of those suffering from yellow fever after its abstraction from the living body or from the large vessels after death.

MILK FOR INFANTS.

MUCH as cows' and women's milks may vary in composition among themselves, as may also that of the same individual at different times, the essential distinction between the two milks lies in the larger percentage of casein in that of the cow and in the tougher consistence of the coagulum produced by the gastric secretion. The latter defect is to some extent overcome by malting, and the former may be adjusted to the infant's digestive powers by diluting the milk with water or by dividing the milk into two portions, coagulating the casein in one with rennet, removing the curd, and mixing them again. The former is open to the grave objection that dilution reduces the fat and the sugar, neither of which were in excessive amount, equally with the casein, and, though milk sugar and cream may be added, cream itself contains very uncertain proportions of fat and cannot again be perfectly incorporated with the milk, the fat globules having to some extent coalesced. In the latter process the proportions of fat and sugar are undisturbed; but it is tedious, and the tendency of the milk to "turn" is increased. Gaertner has recently taken advantage of the action of the centrifugal separator to retain in a diluted milk the full percentage of the fat. Fifty litres of fresh milk and the same of water are poured into the separator, which is made to revolve at such a rate that the two outgoing streams shall be equal. The separation of the fat is thus incomplete, and a large proportion of the watery solution passes out with it, the percentages of casein and of fat being in the original milk, say, 3.6 and 3.5, in the diluted 1.8 and 1.75, and in the cream and separated, or rather in the rich and poor milks, respectively 1.8 and 3.3 and 1.8 and 0.2, those in good nursing mother's milk being, according to Pfeiffer of Wiesbaden, 1.7 and 3.1. If, then, milk sugar be added in the proportion of 3.5 grammes to the litre the composition becomes identical with the very richest human milk. An incidental advantage accruing from the centrifugal rotation is that the rich milk is completely freed from the suspended particles of dung, dust, &c., which in virtue of their greater specific gravity gather round the sides of the drum, forming a scum, which is fatal to young pigs. These particles are the chief vehicles of the microbes which set up putrefactive

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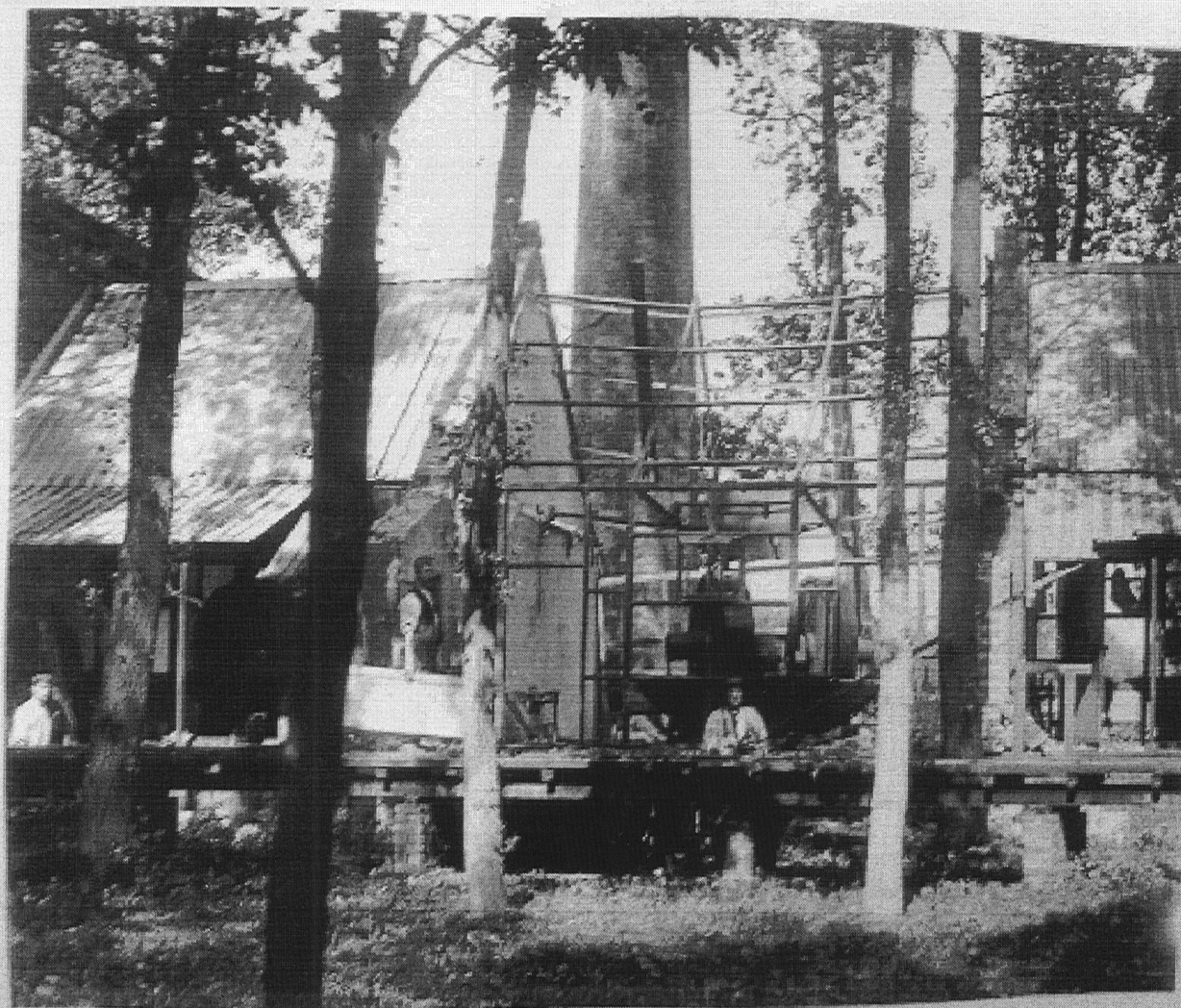
Explosion at Group C Incorporating Mills - No 13 Mill on 10th July 1895. No 13

Explosion at Group C. Inc. Mill

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Explosion at Group C. Inc. Mills 10.7.1895.

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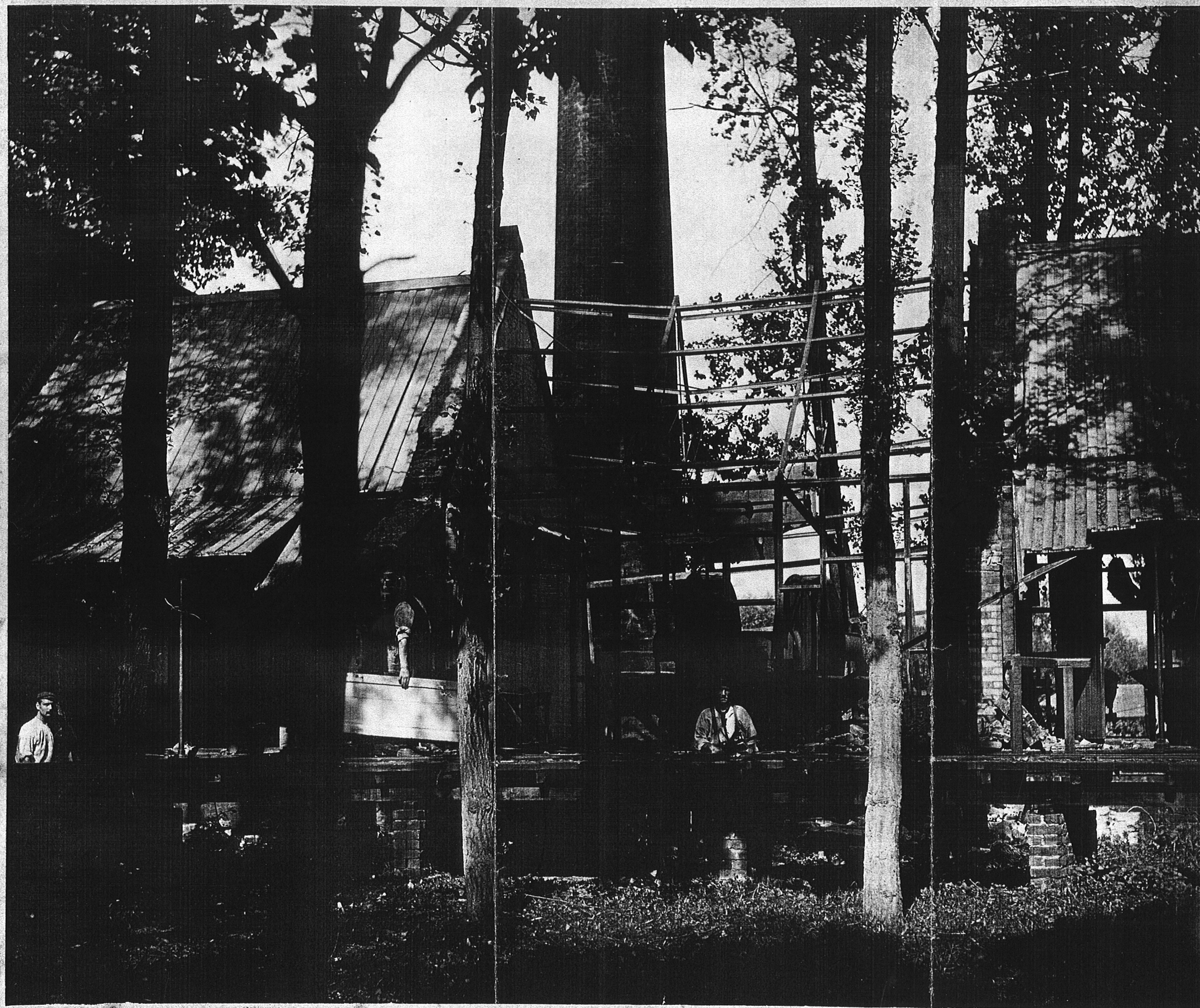
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Explosion at Group C. Inc Mills 10.7.1895

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*Royal Gunpowder Factory, Waltham Abbey
Explosion at N° 136 Incorporating Mill Group C on 10th July 1895.*

128/98

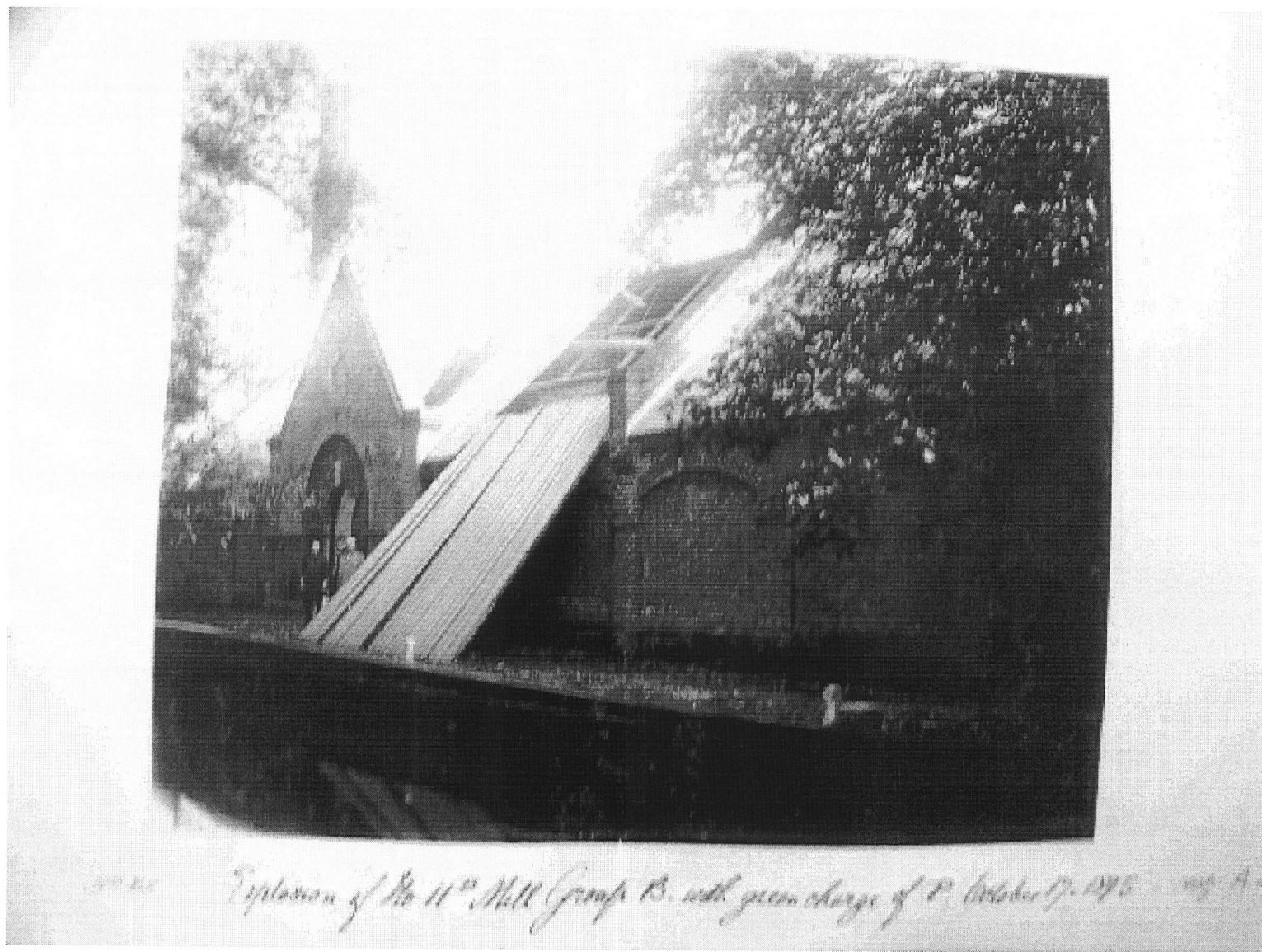


Explosion of No 11 Mill Group B with gun charge of P October 17, 1895

Explosion of Group B. 17.10.1895

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Explosion of Group B.

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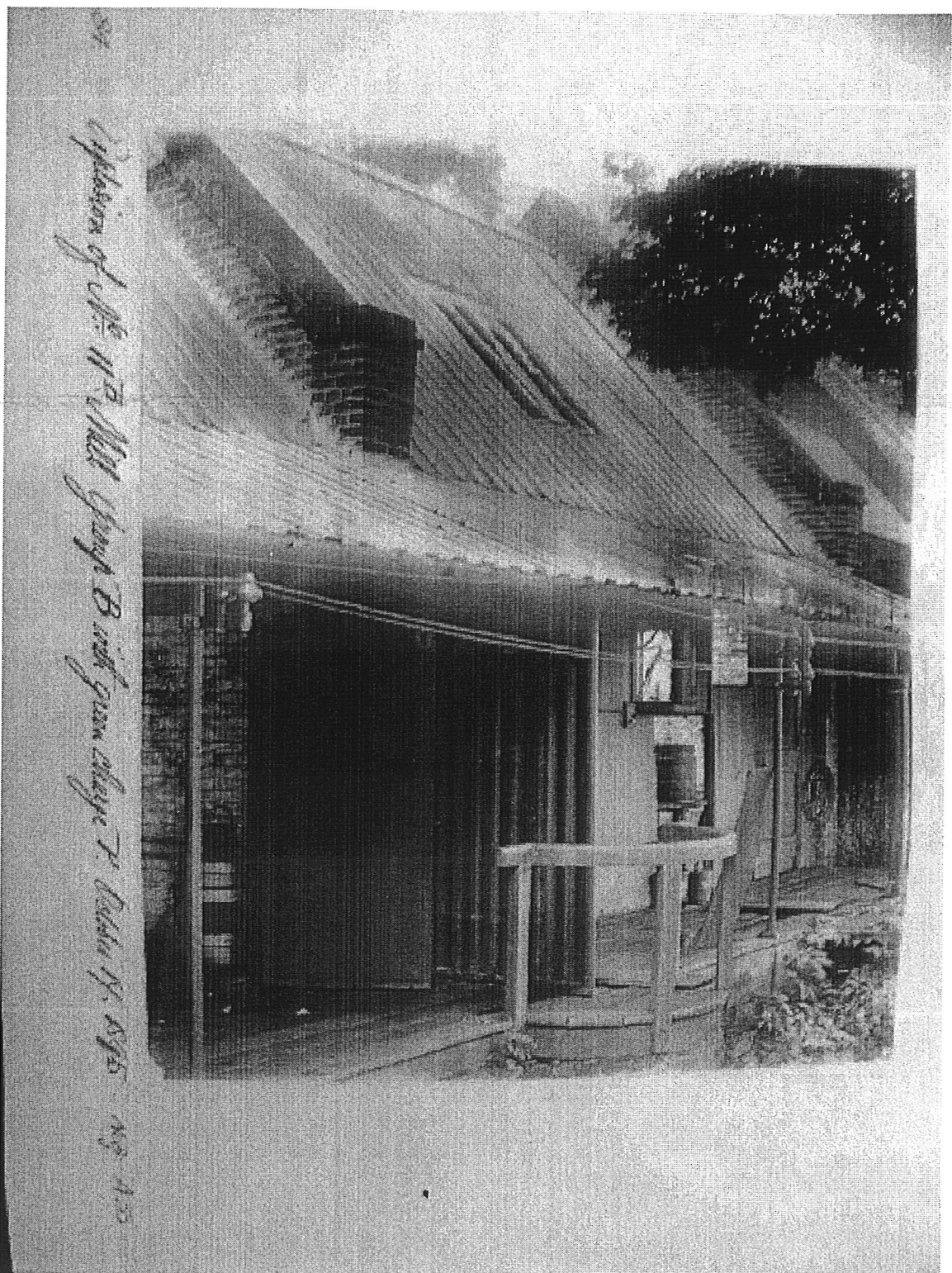
Exposition of No. 11 B. Hill Group B with your change T. October 19. 1895

Exposition of Group B. 17.10.1895

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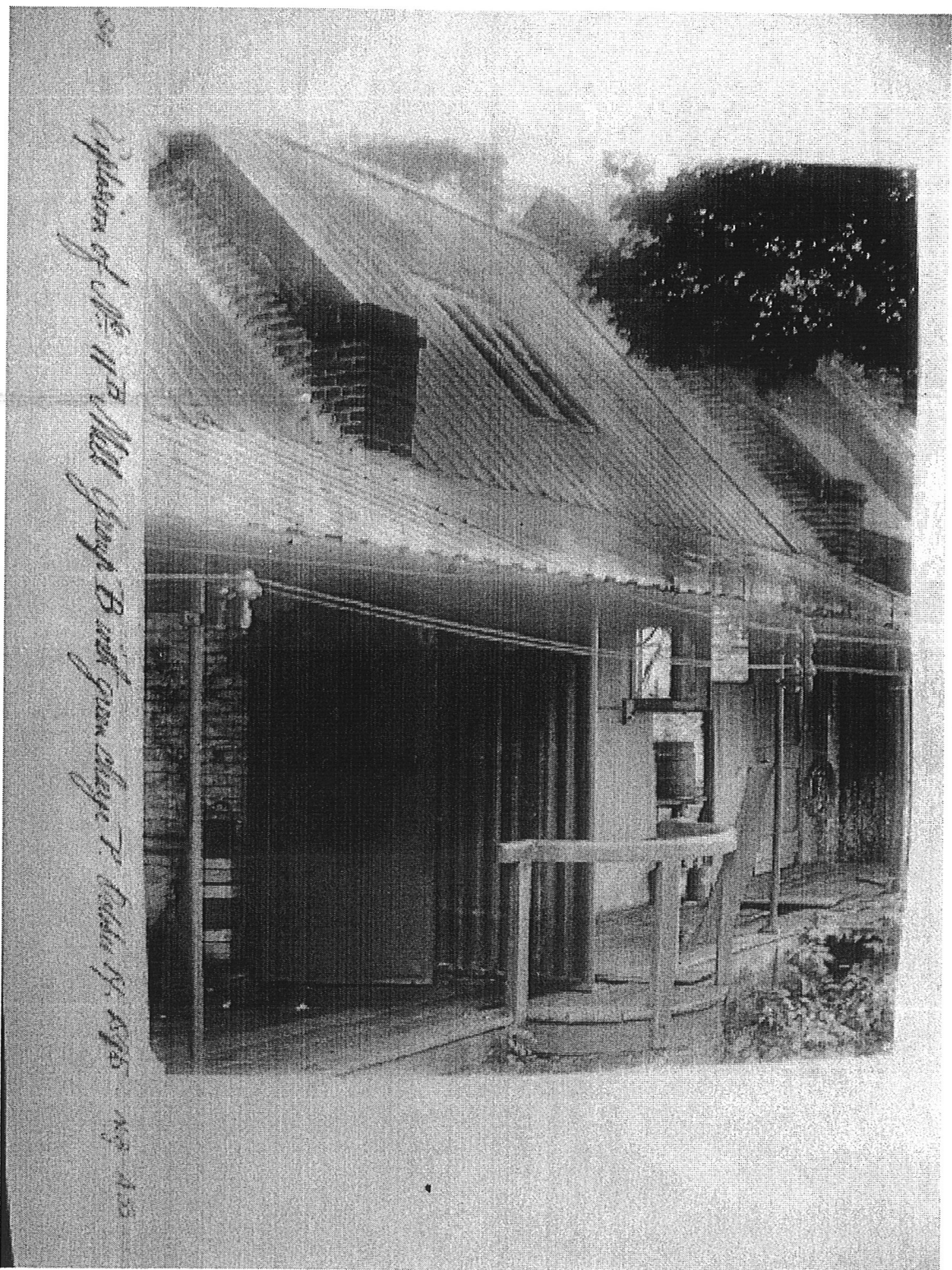
Exposition of Mr. W. H. Hill Group B and from Chicago T. Dallas N. 1895

Exposition of Group B. 17.10.1895

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Exposition of Mr. W. H. Hill Group B and given charge T. Butler Jr. 1895

Exposition of Group B. 17.10.1895

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