

The Bubonic Plague.

BY LANA.

II.

Continued from Page 812.

Two very important resolutions were arrived at by the Board of Health. The first had reference to the period of detention for "contacts." Hitherto, it will be remembered, those residing in the house from which a plague stricken patient has been conveyed have been compelled to remain in quarantine for 10 days, that being the longest period of incubation, according to the generally received opinion, before the disease declares itself. The board now recommend that the period of detention for contacts be reduced to five days. It is understood that the members of the board do not attach much importance to the segregation of the house-fellows of a plague patient, seeing that the disease is not, except in comparatively few cases, which are exceptional in their nature, communicable by infection as scarlet fever and other epidemic diseases are. The plague in a patient is generally the result of actual inoculation.

The board also made a recommendation respecting hospital accommodation for patients. The quarantine hospital is becoming filled, and in consequence of the number of cases that have been discovered during the last few days it was decided to submit a suggestion to the Government that the Coast Hospital at Little Bay should be made available for use in plague cases. With a view to having the hospital ready as soon as possible, the board has recommended that no further patients be admitted for the present.

In connection with the quarantining of warehouses, the Board of Health having reported to the Premier that the two warehouses which had been quarantined were now thoroughly disinfected, the buildings have been released. Mr. Lyne received word that in one of the cases which were reported on Saturday night the patient worked at a warehouse near the city where a previous case of plague had arisen. Under these circumstances, the Premier issued orders that the warehouse was to be quarantined. Mr. Lyne says that if only an isolated case is reported in connection with a warehouse he will not quarantine the building, but if more than one case arises he thinks it points to the probability of the premises being infected, and orders will be issued for the quarantining of the place.

The following telegram from the Premier of Queensland has been received by Mr. Lyne:—
"In view of the continued spread of the bubonic plague in Sydney this Government has notified the intercolonial steamship companies that they must in future at the commencement and end of a voyage of every vessel trading between Sydney and Queensland ports carry out at their own expense a thorough fumigation of the vessel, and must also at the same time arrange for an effective cleansing of the vessel's bilges, both operations to be conducted to the satisfaction of the port health authorities. Thus, in the case of vessels trading

authorities. Thus, in the case of vessels trading between Melbourne and Cooktown, and calling at Sydney both ways, the fumigation and cleansing must take place at both Melbourns and Cooktown as soon as cargo has been discharged, while similarly vessels running from Sydney to some intermediate Queensland port must be fumigated and cleansed at both terminal ports. I shall feel obliged if you will allow the operation in Sydney to be supervised by some competent officer, and have a certificate in respect of each vessel forwarded to the Chief Secretary's Department here. We shall of course be prepared to pay any expense involved, and as the course now proposed has been decided upon in preference to the very much more drastic measure of quarantining all ships from Sydney, which would have a most disturbing effect on the commercial relations between our colonies, I trust you will see your way to afford us the desired assistance."

The Premier states that he quite agrees with the action of Queensland in the matter. He replied that the New South Wales Government would assist in every possible way.

With regard to the arrangements made for the fumigation and disinfection of vessels arriving at Newcastle, the Premier, after consultation with Mr. Lockyer, of the Customs Department, communicated with the Chamber of Commerce, and also with the Health Officer at Newcastle, requesting that the regulation should not be rigorously enforced for some few days in certain cases, as captains and owners of vessels would have been unaware of the provision. As a matter of fact, the enforcing of the regulation has been left to the discretion of the authorities at Sydney and Newcastle.

An Executive Council meeting was held on Monday, when it was resolved to declare a further area of the city in quarantine. It will be cleansed in the same way as that already dealt with. The area further quarantined means the whole of the slope of the hill from Kent-street down to the water, and for a distance of 20 yards outside the wharf frontages, and its length runs from the south side of Erskine-street to the intersection of Kent with Market streets. As part of King-street is now in quarantine, the cable trams will use the "cross-over" opposite the Supreme Court building for the present.

The pig and calf market being also within the bounds of the newly quarantined area, the market authorities received instructions to remove all pigs which had been collected there for sale to Glebe Island.

Up to April 3 the total cases of plague are 66 ; 20 patients, whose names and age are given herewith, have died ; 1 has recovered and been released from quarantine ; and 45 cases are now in the quarantine hospital. The number of contacts sent to the quarantine station are about 500. Following are the names of the victims and their ages :—T. K. Dudley, 48 ; John Makins, 36 ; J. D. Madden, 25 ; Robert Walker, 22 ; Frederick Dovey, 2 ; Lionel Owles, 16 ; Edward Kelly, 39 ; Ellen M. McCann, 14 ; Henry O'Connell, 19 ; Vincent Heaton, 23 ; S. C. Pepper, 19 ; W. Hayden, 21 ; W. Haynes, 25 ; John Gates, 23 ; Bennett Oliver, 24 ; Francis Jackson, 45 ; F. W. Burns, 35 ; George

24 ; Francis Jackson, 45 ; F. W. Burns, 35 ; George Cooper, 43 ; James Riley, 36 ; A. Mills, 40.

Several of the illustrations in this number of the

cleansing work in the infected area are from photographs obtained from the Works Department, which had a special photographer in the quarantined portions of the area for several days.

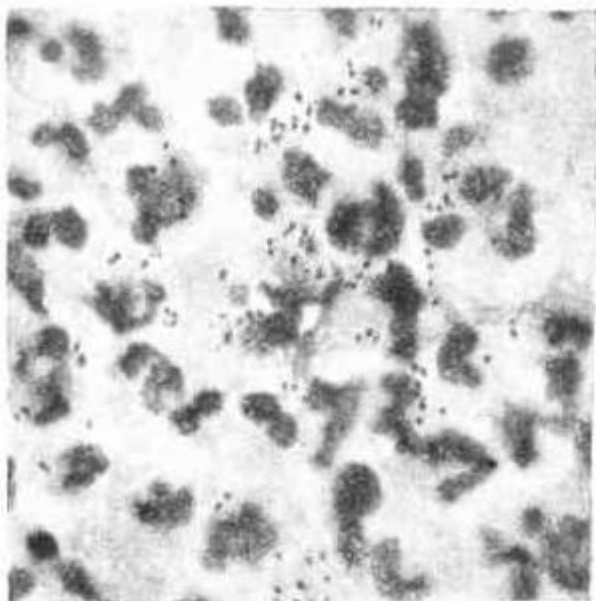
Five fresh cases of plague were discovered on Tuesday they were—Arthur Casson, of Rockdale ; Robert W. Smith, of Canterbury ; Jos. Lealie, of the city ; Charles Wells, of the city ; and John Gaynor, of Ultimo, all of whom were sent to the Quarantine Station. There were no deaths.

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II.

In last week's issue the common sense view to take of the plague was strongly impressed on the " Mail " readers, but a number of correspondents are desirous of knowing also something of the pathological aspect of the question. To meet this desire I have looked up the latest and most up-to-date bacteriological work published. It is by Robert Mur and Jas. Ritchie, two well-known

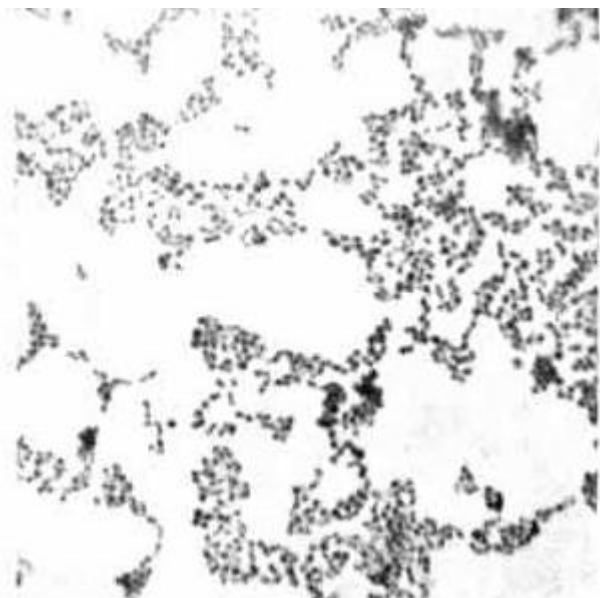


BACILLI IN SMEAR.

Preparation of Material obtained from Femoral Gland in Sydney.

authorities, and the date of its publication is 1899. From the extracts I have given it will be seen that the most important discoveries are comparatively only of recent date. The bacillus of the plague was





BACILLI IN COVER GLASS.

Preparation from Culture in Sydney.

discovered, independently, by Kitasato and Yersin during the epidemic which raged at Hongkong in 1894. This is rather remarkable, for, as already mentioned, both specialists were working independently



BACILLI OF PLAGUE.

Obtained from a Culture in Hongkong.

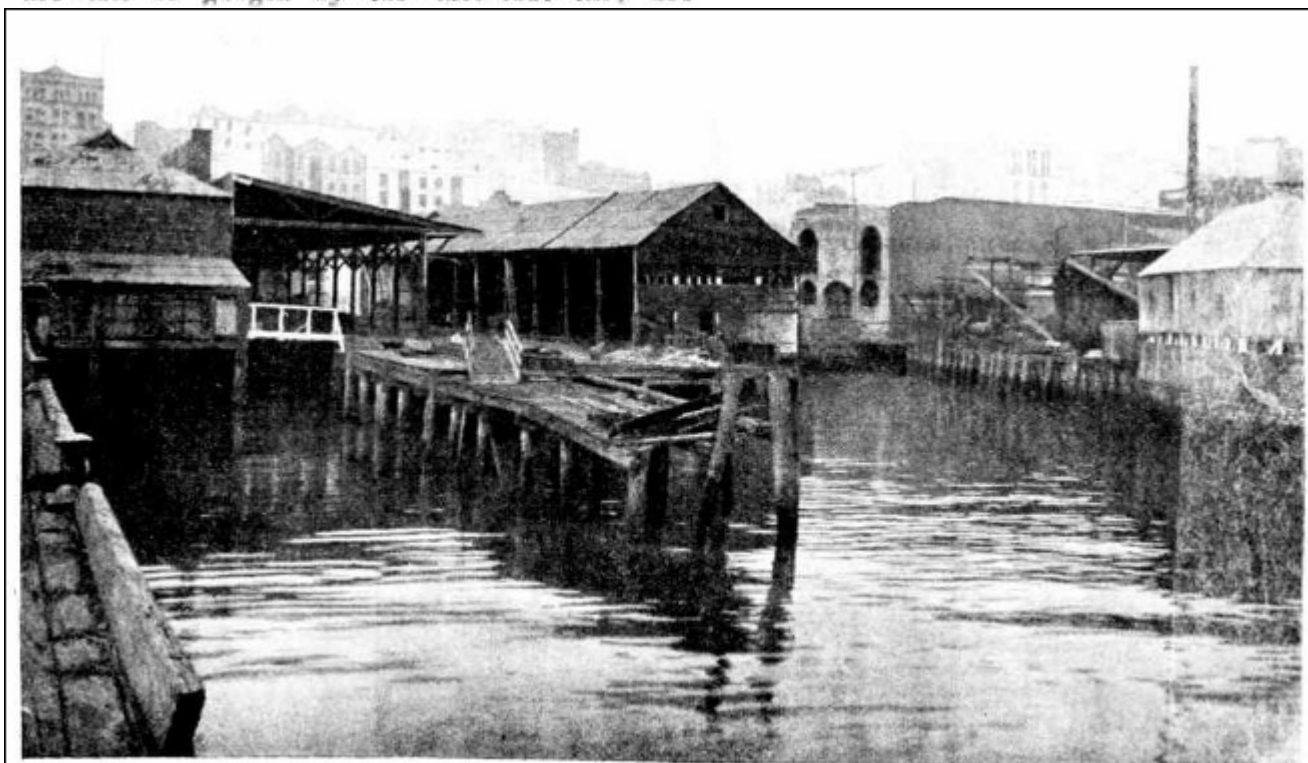
of each other. They reproduced the disease in susceptible animals by inoculation of pure cultures. You will notice the bacilli of the disease illustrated herewith in two or three forms. Although greatly enlarged from the original by the aid of the microscope and carefully reproduced in that state by photo-





FIRE ENGINE CLEANING KENT-STREET.

graphy, the illustrations do not convey the true form. If you look at the pictures uninterruptedly for, say, three or four minutes and shut your eyes, they will have assumed the shape of oval rods, opaque at each end and transparent in the centre. And this is exactly their shape. How infinitesimal they are can be gauged by the fact that they are



A WHARF WHICH IS TO BE PULLED DOWN

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smaller than the typhoid bacillus, which is one of the smallest known by the bacteriological profession. In cultures, especially in fluids, the plague bacilli have a tendency to grow into chains, the form strepto-bacillus resulting. They do not form spores. I doubt if the word "cultures" is generally understood in the above sense. I understood little about

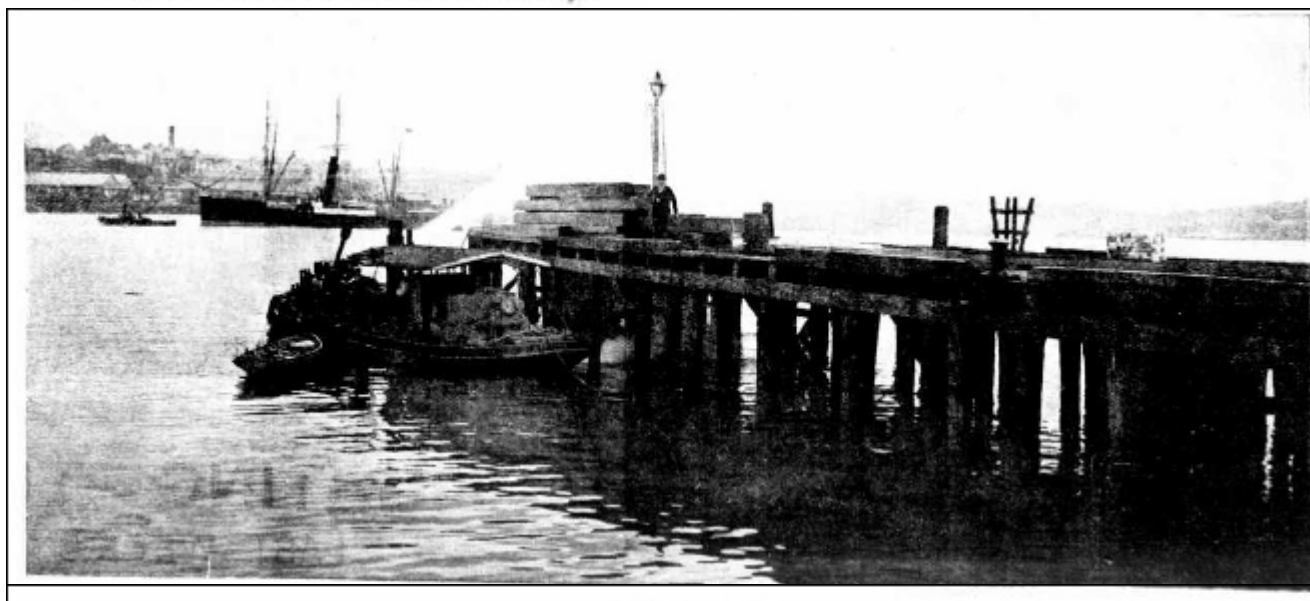
it until I had an opportunity of visiting a laboratory. That visit is fresh in my mind. After a cursory glance round, the doctor who had accompanied me rang his bell and it was answered by rather a slim young man, who showed by his face that his vocation was a pleasant one. His first words to the doctor were:—"I got some splendid cultures for

you to look at." And forthwith he produced some glass jars, which he uncovered and handed over to the doctor, who carefully examined, what to me looked like, gelatinous matter with a magnifying-glass. "Excellent, my boy." Then, turning to me, he handed me over one of the jars and the magnifier, telling me to handle the jar

carefully. I saw a number of dots of an shape and some dark spots lying on the top. I was told was gelatine. I asked the doctor what was looking at, and was informed they were germs. For a few moments I felt creepy like the time I had investigated a number of a infectious disease germs cultivated in bouil

line, and on potatoes I had lost every creepy sensation, and got thoroughly into the doctor's work. Certain temperatures required to breed the germs of certain disease three agents I have mentioned are among those to cultivate germs.

Two of the illustrations are from micro ph



CLEANING WHARFS AND PILES WITH STEAM JETS.



BURNING GABBAGE IN MARGARET-STREET.





BURNING RUBBISH IN INFECTED AREA.



CLEANING IN KENT-STREET.





ONE OF THE BACKS IN KENT-STREET.



CLEANING SUSSEX-STREET.



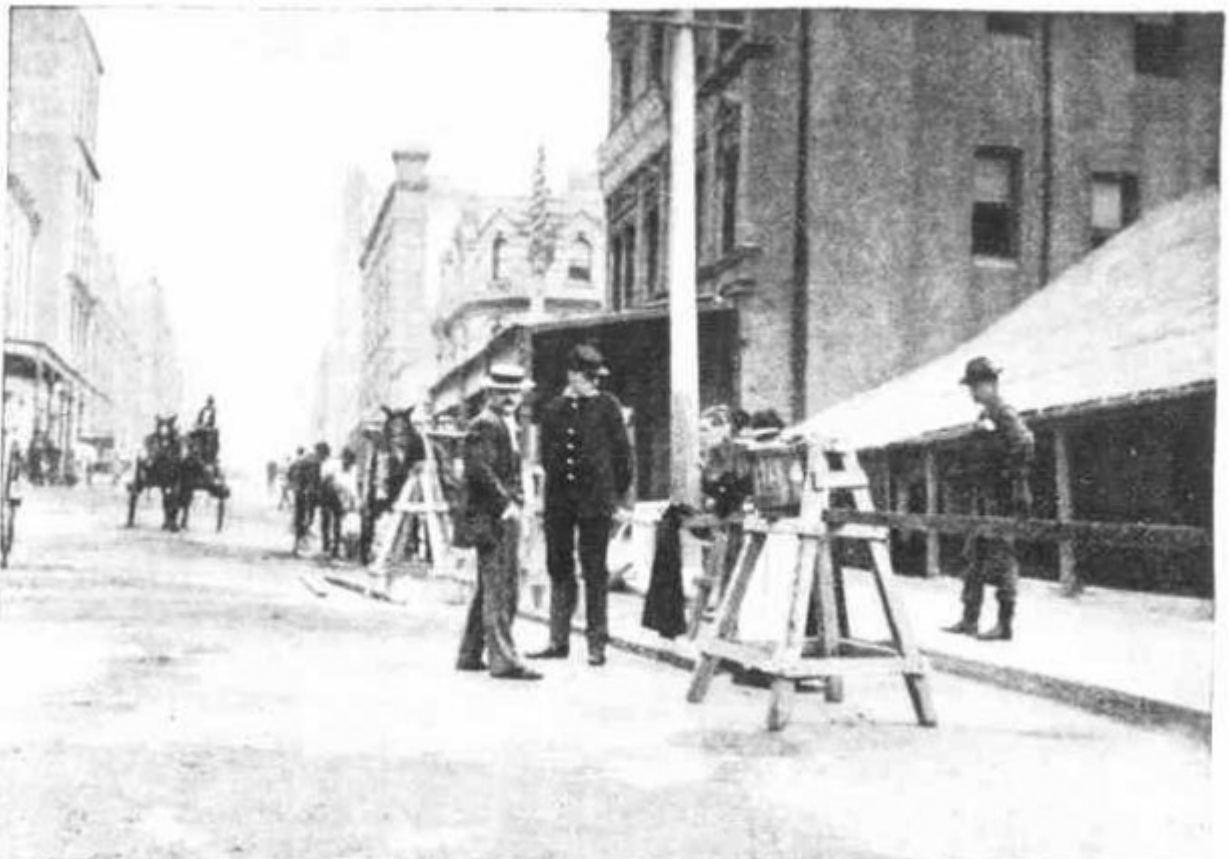


A YARD IN SUSSEX-STREET.

FIGHTING THE PLAGUE IN SYDNEY.

LAST WEEK'S WORK IN THE QUARANTINED AREA.

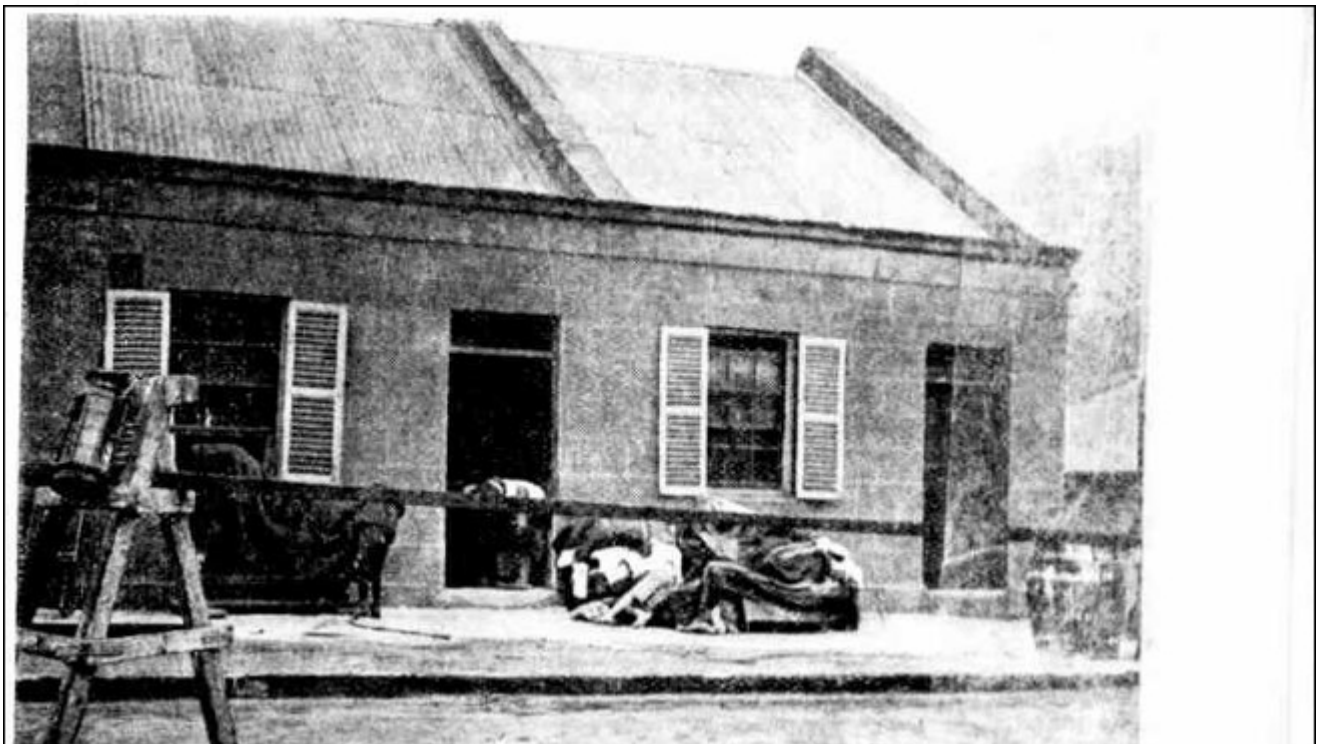
A THOROUGH CLEANSING.



CORNER OF KENT AND ERSKINE STREETS, SHOWING QUARANTINE BARRIER

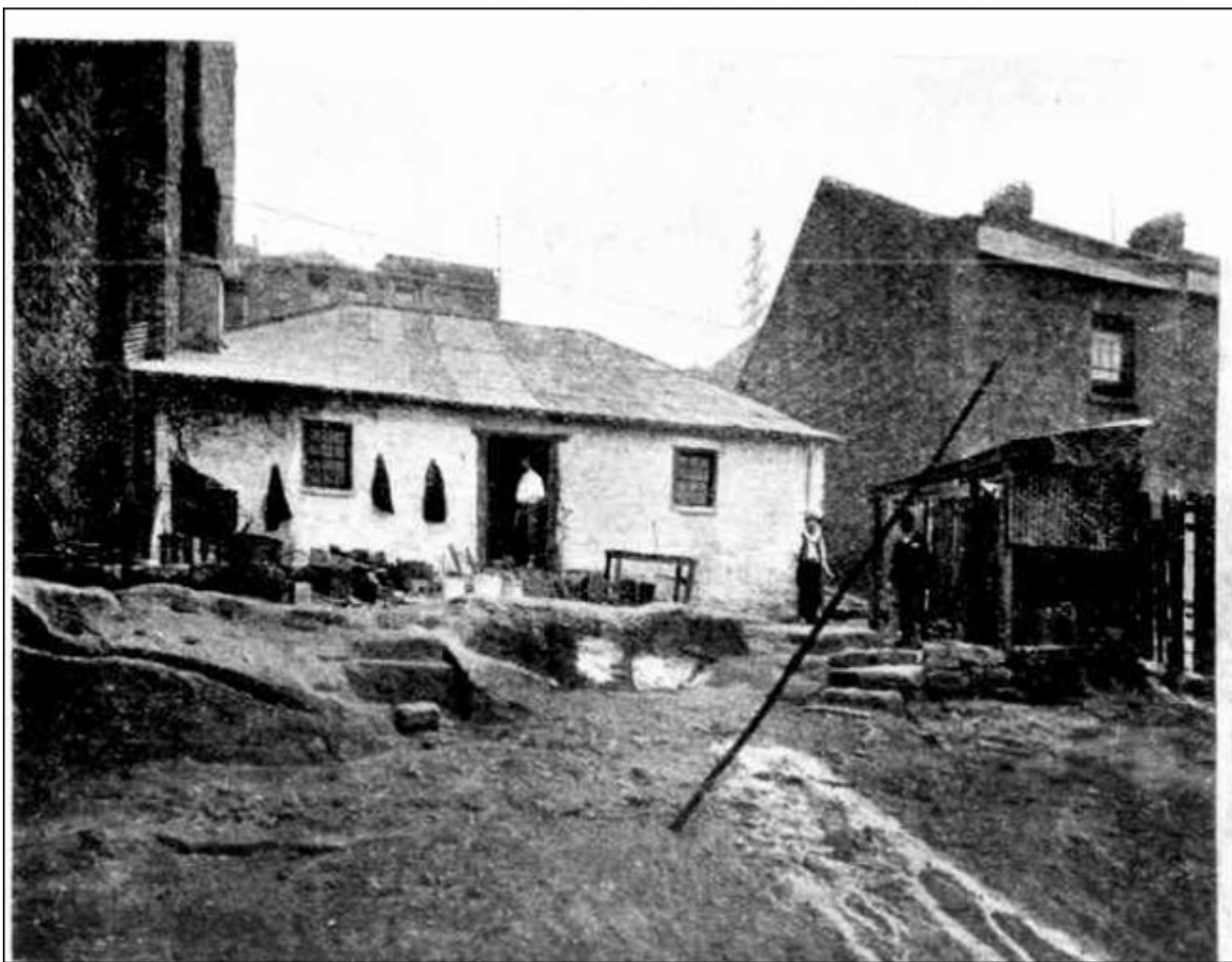


NEAR NORTHERN BOUNDARY OF INFECTED AREA.





CLEANING COTTAGES IN KENT-STREET.



AN INFECTED COTTAGE IN KENT-STREET.

the Board of Health office from bacilli and cultivated by Dr. Frank Tidswell, and sent to the Board of Health. The size of a cimen of bacillus is so small that it would take early 10,000 of them laid end to end to reach an inch in length. I was informed that these bacilli, for they are not animalcules, by their action in the human body when they gain access, elaborate a toxin, or poison in the blood. The disease occurs in several forms, bubonic being the best recognised: to these may be added the septicaemic. The most striking affection of the lymphatic glands, which

use inflammatory swelling, attended with and generally ending in a greater or

use inflammatory swelling, attended with and generally ending in a greater or of necrotic softening, if the patient is not treated enough. True suppuration is rare. A group of glands is affected first, constituting a bubo. When the disease has held of the patient the bacilli occur in numbers in the swollen glands, being often that a film preparation made from a specimen of the culture resembles a pure culture. The primary form the lesion is the well-

recognised "plague pneumouia." This is of broncho-pneumonic type, though large areas may be formed by confluence of consolidated patches, and the inflammatory process is attended usually by much hemorrhage; the bronchial glands show inflammatory swelling. The disease in this form is said to be invariably fatal. In the septicemic form there is no primary bubo discoverable, though there may be a general enlargement of lymphatic glands. Here also the disease is of specially grave character. In the various forms of the disease the bacilli occur also in the blood, in which they may be found during life by microscopic examination, chiefly, however,

just before death in very severe and rapidly fatal cases. In most cases they cannot be detected in the blood by this means, though in some of these they may be obtained by means of cultures.

The organism in its power of resistance corresponds with other spore-free bacilli, and is readily killed by heat. It resists drying for four days at latest, and exposure to direct sunlight for three or four hours kills it. Monkeys, rats, mice, guinea pigs, and rabbits are highly susceptible to inoculation. The bacillus is the immediate cause of the disease,

and the bacteriological observations throw much light on its method of spread. Large numbers of dead animals in infected localities were found to contain the organism. The disease is produced also by inoculation with dust from infected houses, and Yersin found the organism in large numbers in the bodies of dead flies in the infected locality. Flies and mosquitoes may play a part in the spread of the disease, but rats play the most important part in distributing it over wide areas of a town or district when once it has broken out.

The disease can also be transmitted by contagion from persons affected, but this method of

transmission can be much more easily controlled than the previous. The bacillus enters the human body by lesions of the skin surface, by the respiratory passages, and possibly also by the alimentary canal. The first mentioned is the commonest mode. Yersin, Calmette, and Borrel succeeded in producing immunity in a horse by intravenous injection of the living bacilli, and obtained a serum which had more powerful properties.

The system of preventive inoculation against

plague devised by Haffkine has been carried out on a pretty extensive scale in India, the result being that the mortality amongst the inoculated diminished by over 80 per cent.

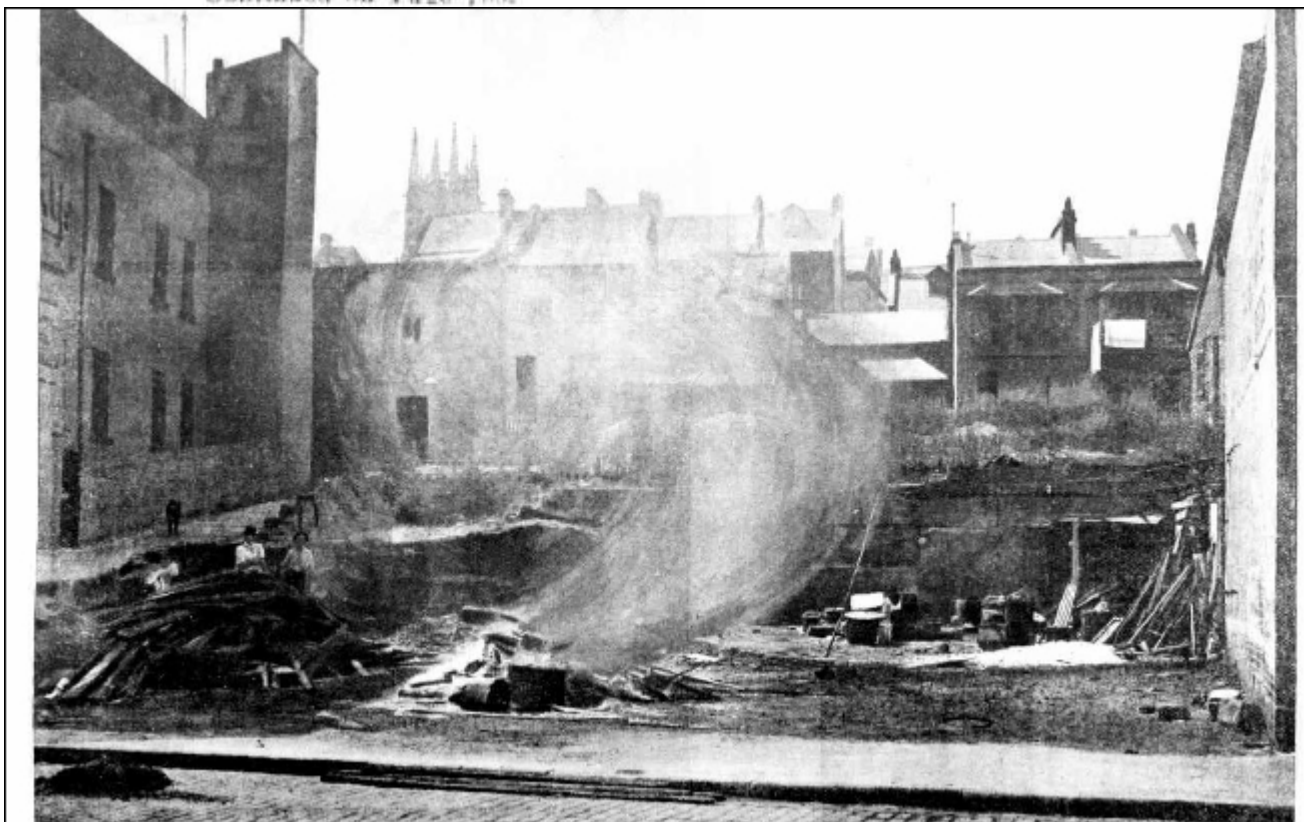
From the above readers will have obtained all that is needed to give them a good insight into the pathology of the disease.

Clearing the first block, between Margaret, Kent, Erskine, and Sussex streets, was completed near the close of last week, and having been inspected was certified to be done by Mr. Gattine.

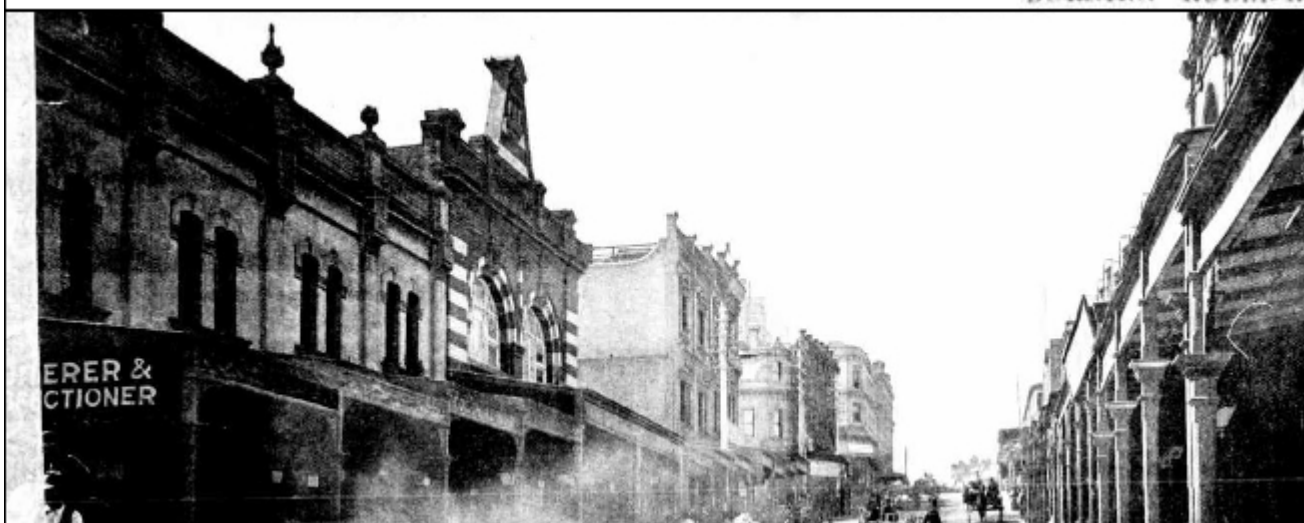
near the close of last week, and having been inspected was certified to be clean by Mr. Getting, chief sanitary inspector. A notice to that effect has been posted on every building in the block.

The Plague Advisory Board held a meeting and decided to notify the fact of the completion of the block to the Board of Health, which apprised the Government that the area mentioned, which it colloquially termed Block No. 1, was thoroughly cleansed, disinfected, and ready to be released from quarantine.

Continued on Page 798.

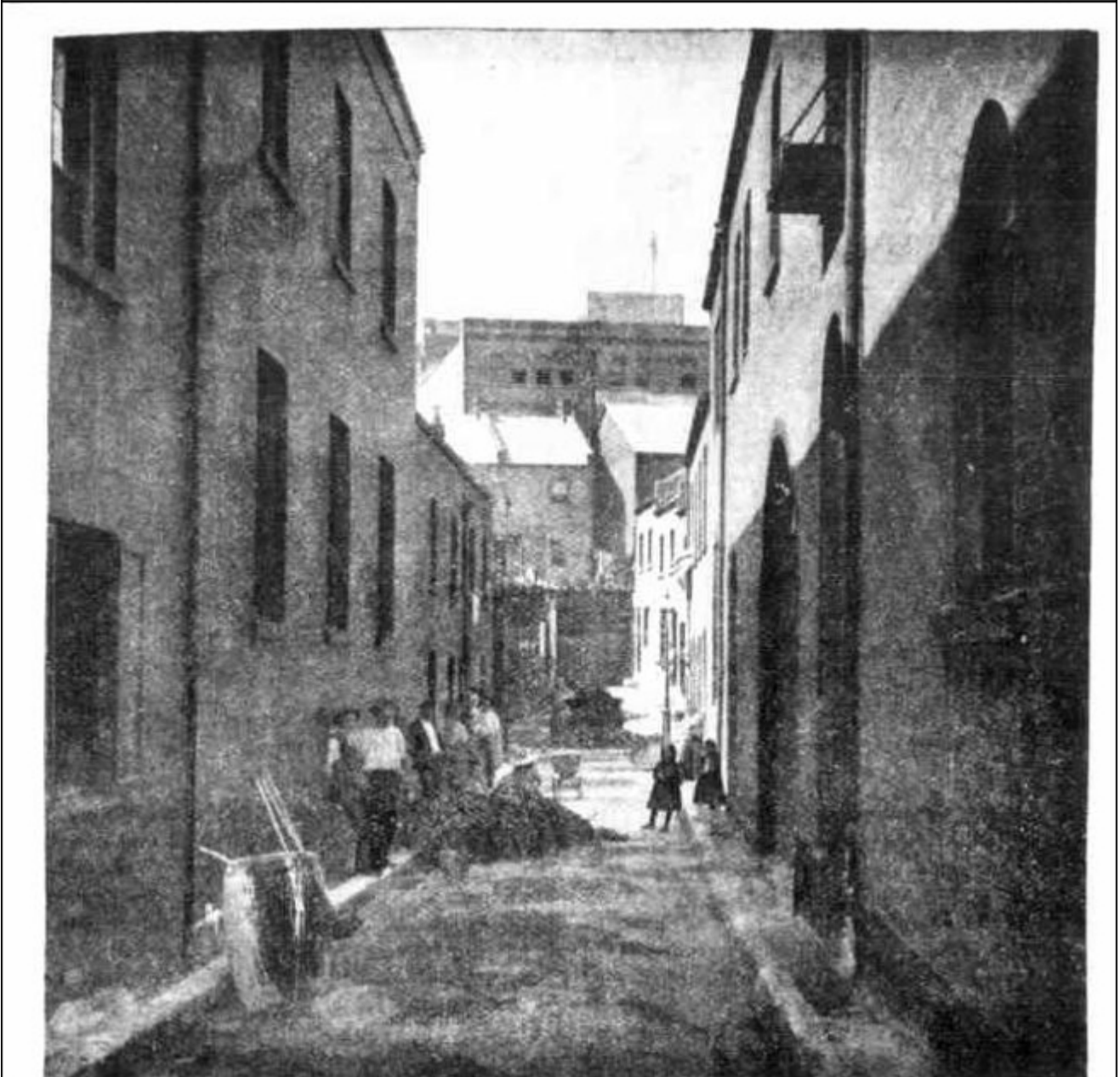


BURNING RUBBISH.



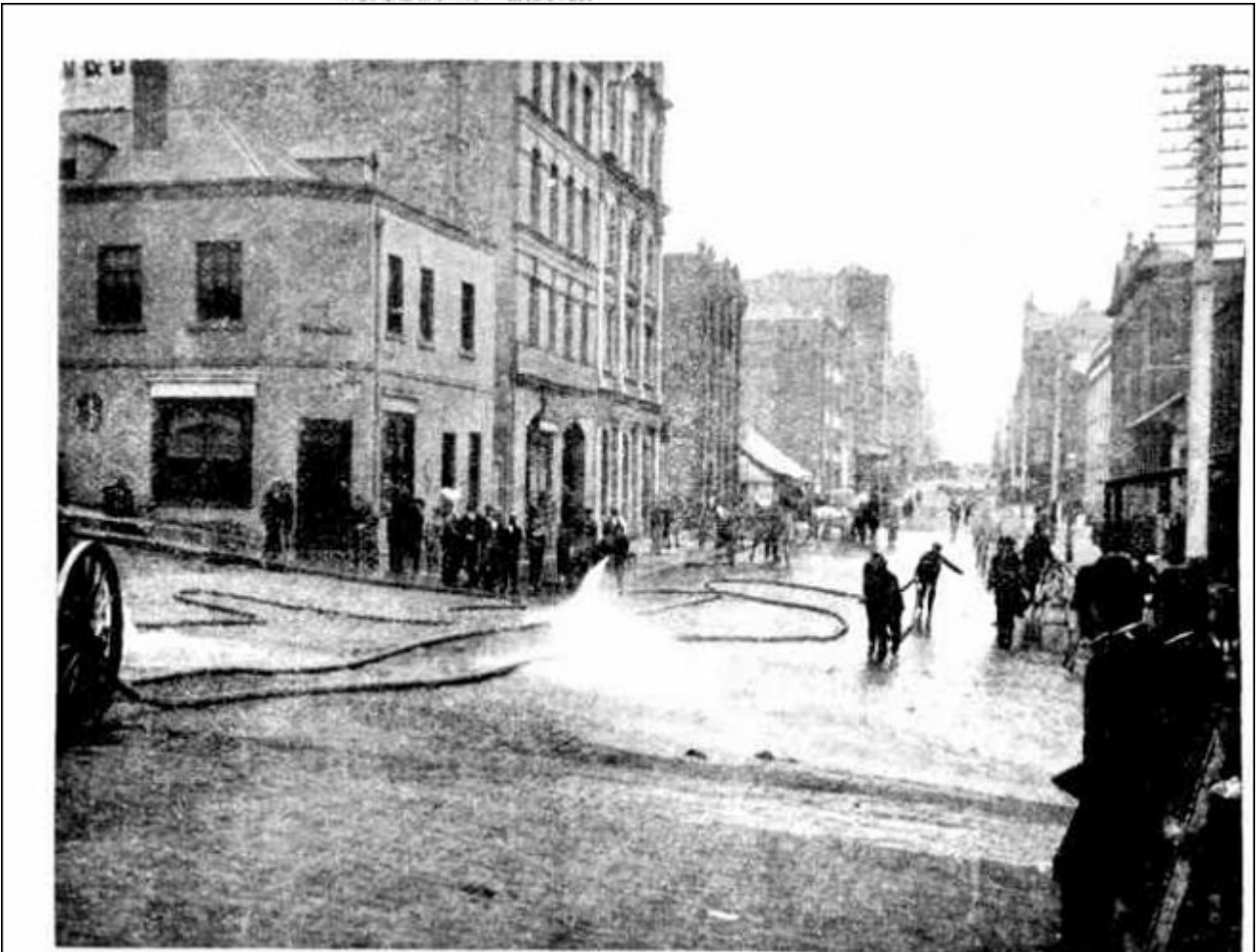


ERSKINE-STREET.

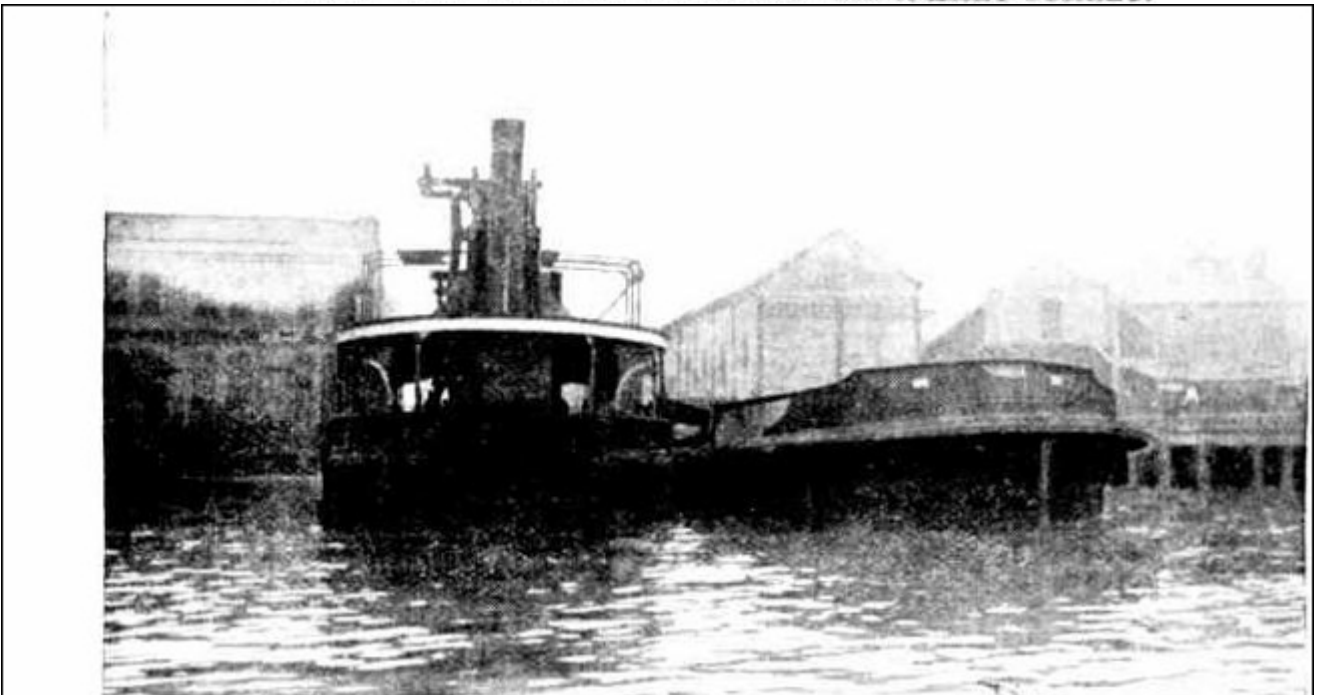


BATSON'S LANE.

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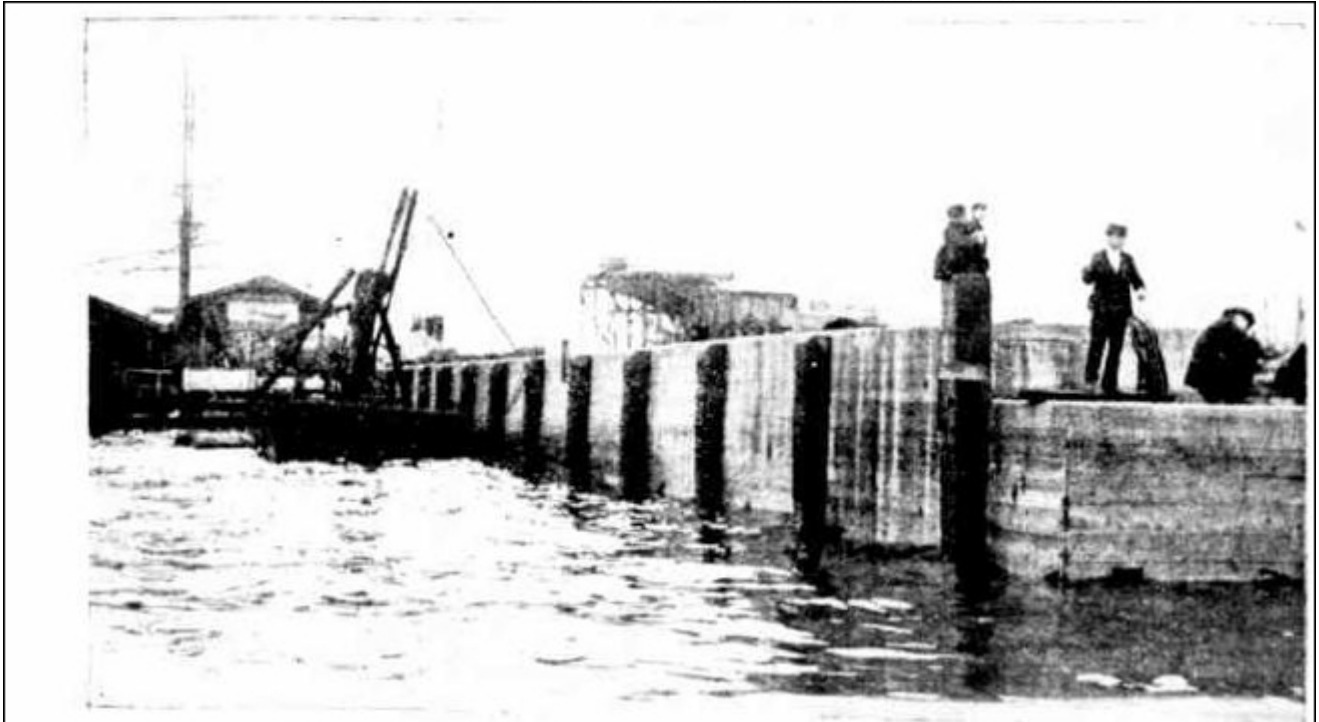


STEAM FIRE ENGINE CLEANING MARGARET-STREET.

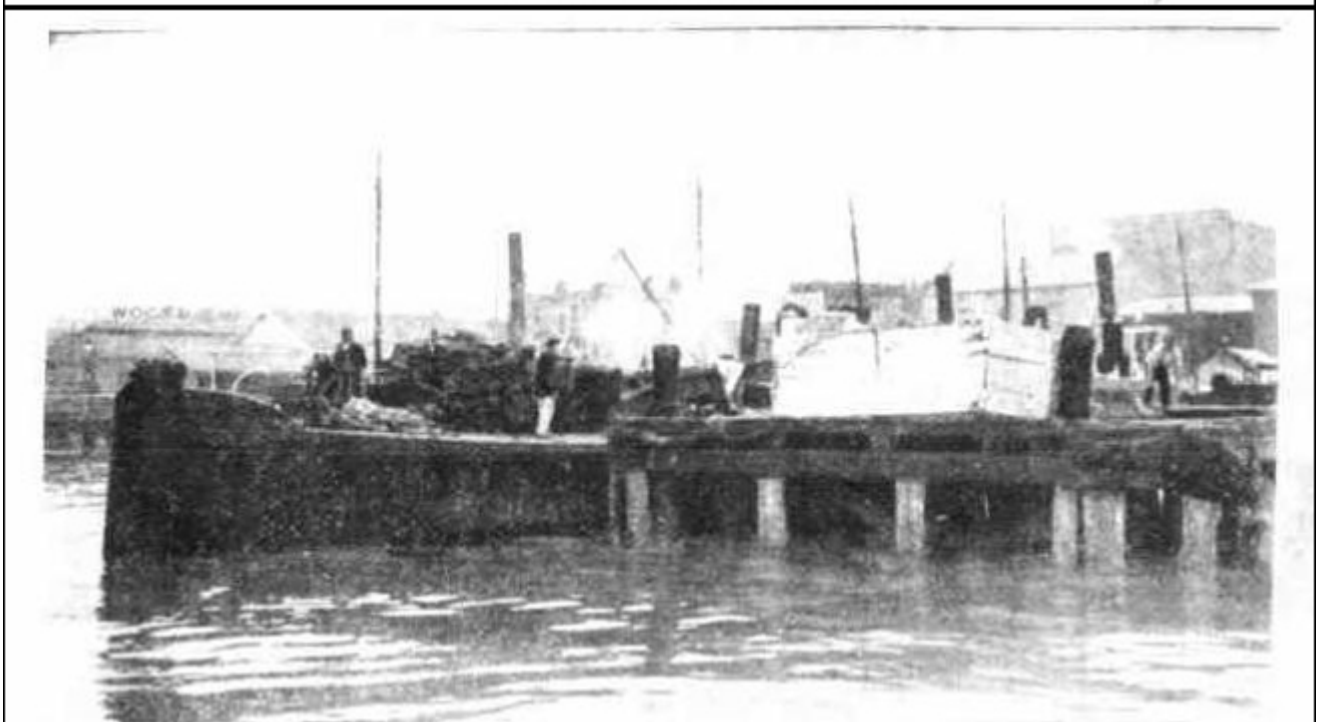




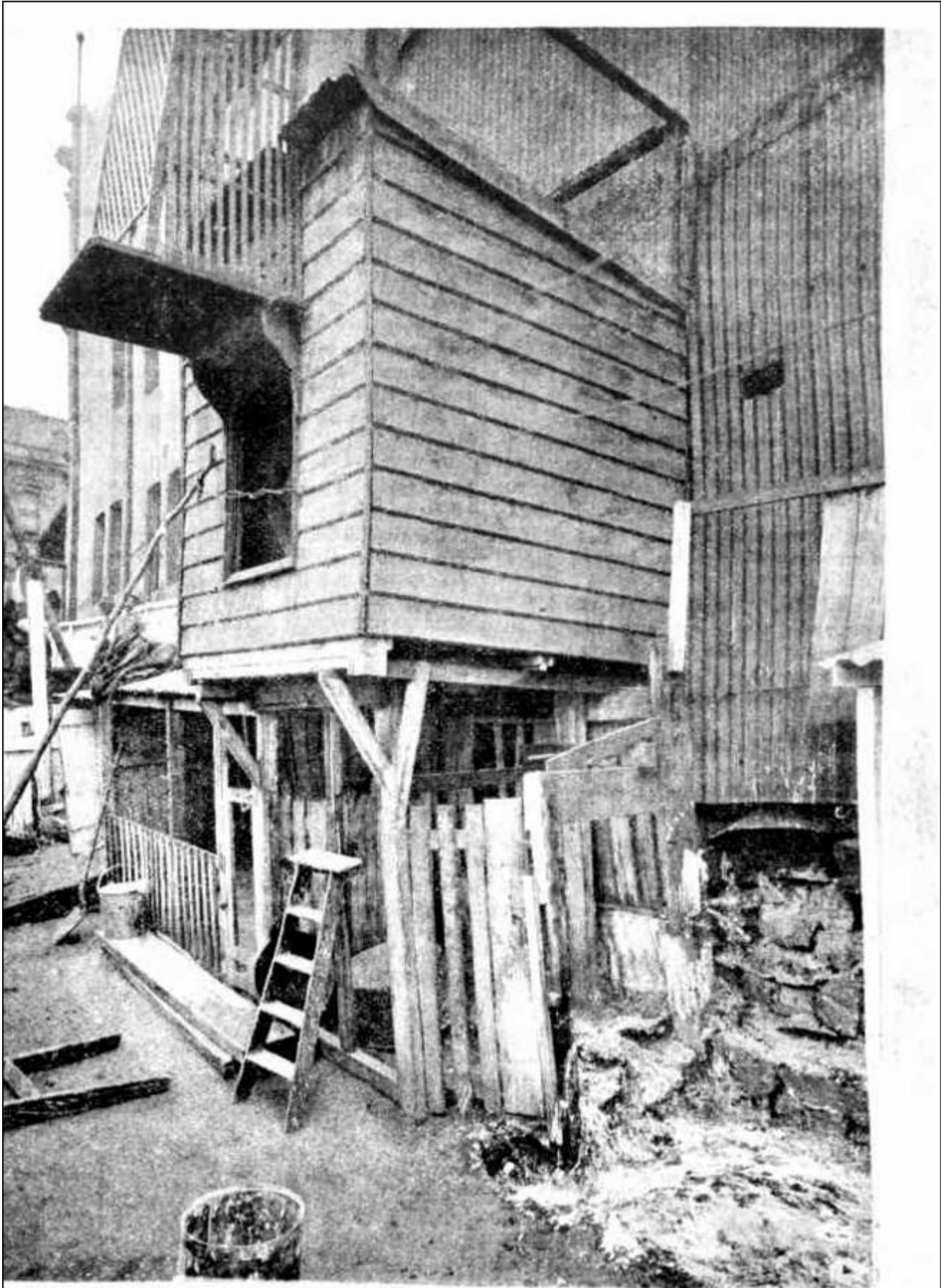
DREDGE WORKING AT FOOT OF MARGARET-STREET.



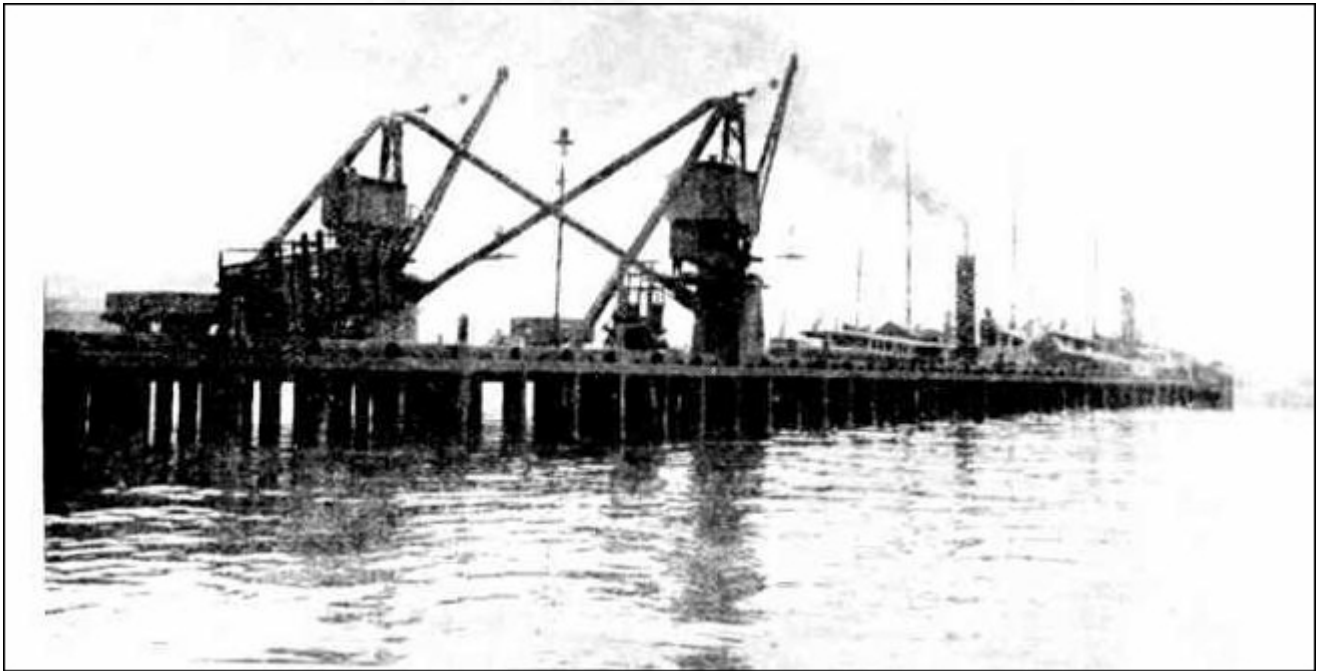
ONE OF THE NEW GOVERNMENT WHARFS AT PYRMONT.
It is concrete, faced with wood guards, a plan which is likely to be followed in rep'acing the old wharfs
on the eastern side of Darling Harbour.



LOADING A LARGE BARGE WITH GARBAGE.



A BACK YARD IN KENT-STREET.



THE RAILWAY WHARFS, PYRMONT.
Now used by some of the intercolonial steamers.



A HOPPER BARGE FULL OF GARBAGE.
Ready to be towed to sea.