after admission. The abdomen was partly full of pus, the result of a ruptured pyosalpinx of the right side. The ruptured pyosalpinx tube was removed, the abdomen swabbed out and drained, but the patient died eight hours later.

Case No. 3, Girl E., aged 1 year 5 months, was admitted suffering from suspected tubercular peritonitis. On opening the peritoneum there was a gush of fluid measuring about eight pints. The omentum and intestines were studded with large tubercular nodules; there were four large tubercular masses surrounding the vertebrae. This child died four days later from acute general tuberculosis. The two other cases were operated on for appendicular abscesses, and are not included amongst the operations given above under that head, as the appendices were not removed owing to the fear of breaking down adhesions and setting up general peritonitis. Drainage was used and the cases eventually recovered.

(IX) Intussusception: A child, aged 2, was admitted with the history of passing blood for three days. A large swelling was palpable in the left iliac fossa. The child was very collapsed, so much so that hot salines were given while it was prepared for operation. The "intussuscipiens" consisted of about twelve inches of ileum and cecum, including the vermiform appendix. The whole was gently reduced. The bowel was dark coloured but had not lost its gloss. The child died four hours later from shock.

(X) Nephrorrhaphy: Two cases, both successful.

(XI) Of the 397 miscellaneous operations there was only one death, as follows: A baby was brought to hospital when three days old suffering from imperforate anus. A plastic operation was done at once, the rectum found, brought down and stitched to newly formed anus, but the child died a few hours later. Amongst the others were curettage of the uterus, done in 52 cases; 5 operations for mastoid disease; 3 cases of perineorhaphy; 5 cases of colporrhaphy; 33 radical cures for hernia, etc., etc.

A DESCRIPTION OF THE CYANIDE PROCESS FOR THE EXTERMINATION OF BUGS.

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As a medical officer in charge of troops in South Africa I have on several occasions found it necessary to wage war against the ordinary bed bug. The little pest seems to be particularly fond of the barrack room as a cozy, well-warmed habitat in which to live and breed. The bug seems to be possessed of enormous vitality, and resists all ordinary methods of bringing about his death.

Thorough scrubbing of the whole building with cresol solution, anointing the bedsteads, walls, etc., with paraffin, and fumigating with...
potassium permanganate are only, if at all, partially successful. Careful
attention given to the beds and bedding by each soldier every day will do
a great deal in keeping the barracks free from vermin, but some method
of extermination is really necessary to absolutely free barracks of them.

The only method which has proved successful as a means of doing this
is the cyanide of potassium fumigation process. I carried out this plan in
dealing with vermin in the Simon's Town Barracks with marked success.
The process has a very unenviable reputation for danger, but, with any
ordinary amount of care, it is really quite free from risk. All fatal
accidents which have been reported have been cases of persons going
into a sealed-up room, which was being fumigated, for some article of
clothing, etc., which had been left behind.

THE METHOD.

(a) Ingredients required. — The three ingredients necessary for the
production of the gas are cyanide of potassium, in lump form and of
the purest commercial grade (98 to 100 per cent), commercial sulphuric
acid of full strength, and water. The cyanide of potassium should be
white and crystalline, but dark discoloration and honeycombed surfaces
do not necessarily denote inferiority. There is always a certain amount
of powdered cyanide in a tin. This powdered material gives a full
reaction, but it is a quicker and more violent one, and the use of it
should be avoided.

To ascertain the amount of cyanide and sulphuric acid to be indented
for, the following formula should be taken as a guide: 1 oz. of each
chemical, cyanide of potassium and sulphuric acid, and 2 oz. of water
to every 100 cubic feet of space. This formula is only hard and fast
in relation to the proportion of the ingredients. The ratio of the chemicals
to space is only a guide, as special conditions may indicate higher charges
per 100 cubic feet. Thus, when there are deep cracks or doubts as
to the thorough closure of the room, a greater quantity of cyanide would
be necessary, e.g., an ounce to 60 cubic feet. No allowance should be
made for furniture or other contents of a room.

(b) Preparation of Spaces. — The spaces to be fumigated should be
made air-tight. A fatigue party of men, under a responsible non-
commissioned officer, provided with large supplies of old newspapers
and flour paste, can be trusted to do this. All ventilators, window sashes,
etc., should be pasted up on the outside to avoid the chance of sheltering
any of the vermin. Chimneys should have two thicknesses of paper pasted
over the tops of the chimney cowl. As a rule each room should be treated
separately, but two connecting spaces may be treated as one unit.

Bedding, clothing, etc., should be scattered about the room, care being
taken not to shelter crevices in the bedsteads or walls, and to expose the
entire surfaces of bedding, etc., to the action of the gas. Articles should
be hung on nails on the walls or on chairs. There should be no vessel
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containing water in the room unless the vessel be absolutely air-tight, as water absorbs the gas and thus causes loss.

(c) Preparation for Operation.—Generating vessels should be selected, and the requisite number placed in the centre of each room on two thicknesses of paper. The best article for this purpose is the ordinary paraffin tin. If a small charge (a pound or less) is to be used the tin should be tilted up in order that the mixture may cover the cyanide. The cyanide should be weighed out in the requisite amount for each charge, which should be placed in stout paper or linen bags. No single charge should be more than three pounds of cyanide. If more is required for one room it would have to be divided into two. Each charge should be placed one foot away from its corresponding generating vessel and should have the top of its bag neatly rolled so as to be readily gripped.

Water should be measured out into the tins in the required quantities. The sulphuric acid should be poured out into canteen beer mugs or other receptacles in the correct proportion, and these mugs should be placed beside their corresponding tins. It is advisable for operators to wear rubber gloves during this and subsequent proceedings, as the acid may splash if not very carefully handled.

Another matter that needs preparation at the last minute is the rendering of the exit door of the room air-tight. No door is air-tight when closed, and a good plan is to have strips of paper with large overhanging flaps pasted on to the outside lintel of the door. The free flaps are liberally covered with paste and these are pressed down on to the door after the operators’ exit.

(d) The Operation.—Everything is now in train for the dropping in of the cyanide, and every man except the operators should be cleared out of the building. For the actual operation it is necessary to have an intelligent assistant if a large number of rooms are to be done. Lance-Corporal Davis, R.A.M.C., did this part for me, and with his aid operations were carried through without a hitch. The first act consists in pouring the acid into the water. On no account should the water be poured into the acid or bad splashing will result. The mixture thus made generates heat and it is necessary to add the cyanide while the heat is retained. It is therefore advisable for the assistant to precede the operator and perform this initial action when more than one room is to be fumigated. The operator, armed with a pair of ordinary tongs, then seizes the bag of cyanide and, holding it at arms’ length, drops it into the fuming mixture and bolts for the door. My experience is that there is always plenty of time for exit, as it takes a perceptible period for the sulphuric acid to penetrate the bag. The room should now be left sealed up for at least four hours, or longer if this can be arranged for.

Ventilation.—After the period of exposure has elapsed as many windows and doors as can be opened from the outside should be thrown open. The question of opening upper windows was dealt with here by
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When driving a large screw into the sash of the top half of the window and attaching thereto a stout rope. A stout pull at this rope opened the window. It is advisable to leave the room to air thus all night, no one being permitted to enter before morning. It is during the ventilation stage of the proceedings that risks are run by civilian operators, as they enter the room, after half an hour’s ventilation through an open door, to open up the windows. This is quite an unnecessary risk, of course, and in the Army no danger should attach to this portion of the proceedings. All refuse left should be buried with the tins that hold it.

Precautions.—In fumigating barracks it is advisable to have all troops removed from them and placed under canvas. During the fumigation and ventilation stages sentries should be placed at points of vantage not nearer than twenty yards from the building. They should be instructed not to allow anyone to approach the building, and should be impressed with the deadly nature of the gas. We had a good ocular demonstration of the capabilities of the gas at Simon’s Town. In endeavouring to open one of the upper windows of the barracks a cord broke, so I threw up a stone and smashed a pane of glass. A pigeon, at that moment, flew across just above the window and must have got into the stream of escaping gas, for it fell fluttering to the ground as if it had been shot. The hole in the window was not more than three inches across. The bird eventually recovered.

In conclusion, I think the process with any ordinary care can be carried out with perfect safety to operators and others. It certainly is the only efficacious method of dealing with vermin. After the fumigation we found hundreds of bugs, who would never bite or breed again, lying about the floor, and since then I have seen no evidence of bugs in these barrack-rooms.