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FOR THE YEAR

1945

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these accidents. It is possible to make some industries or processes so automatic that practically all manhandling is eliminated. An interesting example is to be found in the tin-plate industry, which has been a prolific source of handling accidents. An old tin-plate works has been replaced by a large modern strip mill in which the material is not manhandled from the time the coil of sheet metal is fed into the machine until the finished sheets are delivered, cut and sorted into piles of "rejects", "doubtfuls" and "primes".

Falls account for 13.7 per cent. of the accidents. About half of these falls are on the level, and many are caused by stepping or tripping over articles left lying about. Good housekeeping and supervision, and more care and thought on the part of the individual are the remedies. Defective lighting plays its part in these accidents, and to a greater extent than is generally realised, because, as one Inspector remarks, not all are so clearly attributable to bad lighting as one reported to him of a man who tripped over a black cat in an unlighted blacked-out staircase.

Falls from heights must always be a matter of great concern because of the serious injuries they usually entail. Close and continuous watch on structures and plant is essential to see that no defective or insecure ladders, ladders, etc. are in use and that platforms and gangways are provided with proper fencing. Now that maintenance staffs can be built up once again, it is to be hoped that there will be a substantial reduction in this type of accident. Remembering the accidents which occurred during the application of black-out, the shaken condition of some of the buildings in the bombed areas and the nature of some of the strippers used, it was feared that a large crop of serious accidents might occur during the operation of removal. That this did not result can be attributed to the gangways, crawling boards and other means of access about roofs provided to facilitate the work of the roof guards and the more general acquaintance which it brought with roof-work and its dangers, aided by some timely publicity in the technical press and advice given by Inspectors during their visits.

Overhead Travelling Cranes.

Serious accidents, many of them fatal, continue to occur each year to persons working on or near overhead travelling cranes. Most of them could be prevented by the adoption of comparatively simple precautions and the exercise of ordinary care. In many factories precise rules have been formulated with the object of ensuring that proper steps are taken to prevent such accidents, but all too frequently the rules are ignored, with consequences that are distressing to everyone concerned. In one such case the Chairman of a Safety Committee neglected to carry out the rules, for the framing of which he had been responsible, and was himself maimed; and in another a workman who was ordinarily conscientious in observing the rules was severely injured when he neglected to do so.

Far too many accidents result from the ease with which access is obtained to the ladders and gangways by which cranes are approached. However good safety rules may be, it is desirable that they should be supplemented whenever practicable by physical barriers or danger warnings. At one large factory, locked gates at ground level are fitted to ladders giving access to gangways, and the key is kept in the custody of a responsible official; at another a trap-door at the top of the ladder must be raised, and this automatically switches on red danger lamps suitably placed for observation by crane

When anyone works on or near the crane track where he is liable to be struck by the crane, the statute requires effective measures to be taken: either by warning the driver or otherwise, to prevent the crane approaching within twenty feet. Measures commonly taken are the removal of fuses, immobilise the crane, the use of electro-mechanical devices for cutting off the power supply to prevent movement of the crane within the danger zone and the mounting of red flags. One warning device consists of a buzzer in the driver's cab which is controlled by a switch linked to a rocking arm on the outside of the cab. Brackets carrying a fixed arm are attached to the girders supporting the crane track at a suitable distance from the place where the work is being carried out, and this fixed arm engages with the tripping arm for the buzzer switch as the crane moves into the danger zone, and the driver is warned to stop. These safety brackets are placed in position by plant fitters whose duty it is to test them for effectiveness and record the result on a special log sheet.

Shipbuilding and Ship Repairing.

During 1945 there were reported 17,667 accidents in shipyards or in ship repairing in dry or wet docks, of which 92 were fatal, as compared with 19,966 accidents, 110 fatal, in the preceding year. There was thus a substantial decrease which is in line with the accident trend in industry generally. An estimate made for the Scottish yards indicates a fall of about 14 per cent. in the number of accidents per 1,000 persons employed.

The end of the war was followed by a period of transition during which the building of warships gave place to the building of merchant ships, and the repairing of bombed and mined vessels to the refitting and conversion of craft in order that they might resume their peacetime purposes. A typical example was the re-conversion of a large number of minesweepers to trawlers so that they might rejoin the fishing fleets and help to augment the country's food supply. A noticeable feature is the reduction in the number of women employed, whose useful work, especially as electric welders, helped at a critical time to compensate for the shortage of riveters.

The increased use of electric welding referred to in previous years was still evident, bringing with it the reorganisation of yards in order to construct ships by this means. In addition to problems relating to the lifting of heavy prefabricated parts, this change, together with the increased use of such inflammable and practically odourless and colourless gases as propane and butane for gas cutting and welding operations in place of acetylene, gave rise to problems concerned particularly with the provision of adequate ventilation in enclosed or confined spaces and the minimising of the risk of explosion. The incorporation of a stenching agent with these odourless gases in the near future, in order that their otherwise unsuspected presence may be readily detected, should prove a valuable precaution.

A further problem is the provision and adequate use of suitable means to prevent eyeflash, not only among electric welders themselves but also among others working with or near to them; observation in the yards indicates that more could be done both by employers and employees by the greater use of screens and goggles to prevent this painful indisposition.

The considerable development during the war years in the use of asbestos either alone or as part of a mixture, for the purpose of heat and sound insulation aboard ship, with consequent increase in the number of workers exposed to risk of injury to health through asbestosis, called for action. If this risk is found to continue, the question will arise of including some statutory

quirements on the subject when the Factories Act Regulations for constructional and other work in ships are revised and extended. In the meantime, however, a letter has been sent to employers' and employees' organisations and others concerned calling attention to the matter and suggesting certain precautions, which, since they have been accepted both by the Shipbuilding Employers' Federation and by the Trade Unions concerned, should by their adoption do much to ameliorate the conditions of work.

The increased attention given throughout the year to methods, mostly experimental, of cleaning outer bottom plating in dry docks and the application of spraying of anti-corrosive and anti-fouling paints has been noted, and these are also matters which may call for some regulation.

The difficulty experienced during recent years in obtaining suitable timber for staging purposes is now less acute; the position will be further eased by the tendency to use steel thwarts, instead of wooden ones, in conjunction with lattice uprights. An interesting development noted in staging practice was the use of brackets welded temporarily to the shell plating of a ship on the stocks for the purpose of supporting exterior stages. This arrangement, together with the use of trestle staging for the lower strakes of plating, made possible the elimination of both uprights and thwarts, and special brackets, carrying stanchions, were used at intervals to support staging and rails. The unobstructed condition of the berth thereby secured facilitated the assembly and handling of large prefabricated parts.

The periodical meetings of Shipyard Safety Officers have continued to be well attended. The discussion of such useful subjects as the precautions necessary in connection with the use of tubular scaffolding in shipyards, the improved design of ladders and staging trestles, better means of signalling to overhead crane drivers, together with the exchange between one shipbuilding centre and another of information relating to accident prevention, cannot fail to be of great value to these officers. One comment, so obvious that it should be unnecessary:—Unless the Safety Officer is given the proper status and authority and adequate time to play his full part and apply in the shipyard the knowledge he has gained at these meetings, much of his benefit will be wasted.

Safety Organisation in Factories.

Inspectors' reports contain many accounts of comprehensive accident prevention schemes which are in operation in factories and of a number of new safety organisations which have been started during the year, but on the whole the year has been one of consolidation of ground already gained rather than of spectacular progress. Preoccupation with the change-over to peacetime production and the inevitable dislocation which large-scale reorganisation involved have not encouraged any striking development. With the return to normal conditions it is much to be hoped that there will be a further spread of the movement. Factory accidents at their present level are estimated to represent a loss to industry of at least 20,000 workers throughout the year. With the present drive for production, this alone is a strong spur to action, quite apart from humanitarian and other motives.

It is fitting that we should express our appreciation of the valuable assistance we have had from the Royal Society for the Prevention of Accidents in the special wartime safety campaign conducted jointly with them, and I am glad to think that, although our formal association has now come to an end, very close co-operation will continue. During that campaign, posters which have gained an international reputation for their artistic merit as well as their aptitude have been regularly distributed to nearly 7,000 factories;

but admittedly posters, while useful in gaining and keeping attention if frequently changed, can accomplish little else alone. Accident Prevention Bulletins, which have been not only read but passed from hand to hand and thoroughly digested, have also been produced with such regularity that staff shortages and printing difficulties have permitted; while booklet and leaflet publications circulated first in sample form, have been purchased in large quantities for distribution amongst workers literally by the million—publications of this character can be regarded as effective only in so far as they indicate a driving force in the background. That driving force is provided by the Safety Officers and Safety Committees in the factories. Stimulate it, residential training and refresher courses for Safety Officers were instituted and are still continuing. The lecturers have been provided from amongst our own staff and that of the Royal Society for the Prevention of Accidents, strongly reinforced by well-known and experienced Safety Officers of large firms and by others whose time has been so generously given. Over 400 students have passed through these courses—still far too few to meet the needs and demands of industry. Applications to attend greatly exceeded the number of places available, but it was not possible to hold additional courses owing mainly to the difficulties in securing accommodation. It is hoped that some way will be found of overcoming these difficulties. I am quite convinced of the valuable contribution these courses can make to the accident prevention movement and that expansion is much to be desired. The support given to them is an acknowledgement of the specialised knowledge and skilled technique required by these officers and, I believe, also of the need for according them the proper status without which they cannot be expected to carry out their duties successfully.

Inspectors have continued to give active encouragement to internal safety organisations in factories and have given many addresses to Works Safety Committees, foremen and apprentices. They have also attended many of the meetings of the local Industrial Safety Groups at which Safety Officers and others meet to discuss their problems. The number of these Groups has increased during the last two years from 12 to 32, and the three Metropolitan Groups organised last year two important Conferences addressed by Ministers. The Groups have come into existence partly spontaneously, partly at the instance of the Royal Society for the Prevention of Accidents and of Inspectors. They act as a focus for the Industrial Safety Movement in the area and their influence is not confined to the actual members—it tends gradually to permeate throughout the area. A typical instance is that of a firm which, as a result of a visit by their assistant engineer to a meeting of the London Groups, at once set about forming a Safety Committee at each of their three works.

The results that may be achieved by a vigorous accident prevention scheme are illustrated by the experience of a large engineering firm employing 11,000 workers. In 1944 a Safety Officer was appointed and a Safety Committee formed, and although the numbers employed remained steady the number of reportable accidents fell from 69 in 1944 to 15 last year. The frequency rate at another large engineering factory with an active safety organisation of long standing has fallen progressively during the last years as follows: 3.64, 2.81, 2.68, 2.65, 2.55, 2.11, 1.86, 1.67 down to 1.51 in 1945. Many other instances of reduced frequency rates could be quoted such as from 3.4 to 1.8 in a chemical works, 2.5 to 1.6 in a glass works, 4.4 to 2.15 in a copper mill, 2.7 to 1.4 in a light engineering factory. It is only right to add that some of the firms which have long had good accident prevention schemes have experienced a rise—though generally quite a slight one—in the frequency rate during the past year.

f stating what the "toxic limits" are, so that the engineer may have some basis for his calculations. Toxic limits can never be more than rough working guesses, but even though they were precise that would still not end the engineer's difficulty. Suppose that the vapour formed when a gallon of benzene is vaporised needs to be diluted with half-a-million cubic feet of air to be harmless; it will not do for the engineer to pass half-a-million cubic feet of air evenly through the room for every gallon vaporated, because the benzene will not be evaporated evenly through the room, but only in the local areas where men are painting, spraying, or spreading the benzene. In those areas the local concentrations will be higher than the average, that is to say above the toxic limit. In practice, he passes several times the calculated minimum quantity of air through the room in an endeavour to take care of local high concentrations. Wartime experience in aeroplane dope shops indicates that the method can work safely as far as is known at present. But what is the price? The air is not only to be moved but during much of the year it has to be heated as well, which is a very costly matter indeed. So for reasons of economy alone, particularly as fuel is so precious, general ventilation should never be used unless total enclosure or "fume-cupboards" or other methods of local exhaust are quite impracticable.

In his desire to save the heat otherwise wasted in ventilation systems provided to remove dust or fumes the engineer is asking at present whether he could not pass the contaminated air through some sort of filter that would strip it of its impurities and allow it, with the heat it still contains, to be passed through the workroom again. The idea is an attractive one but in practice it is inadmissible unless filters of a sufficient efficiency are available. Much work on this problem is being carried out at the present time, and the Chemical Section is closely concerned with it.

The remarks made above about ventilation of "fumes" and "vapours" apply equally well to dust, except that in cases of dust the problem is complicated by the fact that the harmfulness may also depend on the sizes of the particles.

The problem of the removal of dust from the air has become pressing in the last year or two, as it is now common knowledge that injury may arise not only from the well-recognised poisonous dusts, such as those of lead, silica and asbestos, but also from a much wider range. It is to be remembered, too, that the Factories Act requires the removal not only of injurious, but also of "offensive" dusts.

Dust Estimation.

Cotton spinning mills, foundries, brickworks and potteries are amongst those factories which have provided problems involving the microscopical examination of dust samples, and for this purpose a projection microscope has been obtained. Electrostatic precipitation apparatus has also been obtained for the collection of samples big enough for micro-chemical analysis by the Government Laboratory. For identification of material in quantities too small for chemical analysis or of complex mixtures of silicates still rather beyond the scope of chemical analysis, X-Ray diffraction methods are being introduced in collaboration with the National Physical Laboratory and the Government Laboratory, whilst the possibilities of the electron microscope and of electron diffraction are being explored.

It is proper to acknowledge here the very great debt the Factory Department owes to the Government Laboratory, who carry out all the Department's chemical analyses. The Chemical Section also looks to the Laboratory for advice on sampling, on the interpretation of the results of analyses, and on numerous other related problems.

Radio-active Materials.

The dangers from X-rays and from the radiations from radio-active materials as used at present in industry are now receiving close attention. Fortunately the solutions have been simple hitherto, whatever the future may hold; where gas or dust from radio-active materials are concerned the same principles are applicable as for non-radio-active gases and dusts. Protection from the radiations themselves is given by suitable screens, or by working at a suitable distance from the source of the radiation. The measurement of the amount of exposure is much easier than in the case of gases or dusts; the workers exposed have only to carry in their clothing a photographic film or an ionisation chamber to enable a measure of the total exposure over a given time to be made.

Escapes of Gases.

The considerations above refer chiefly to cases where the poisons are liberated in the air of the room itself, but the most serious accidents of all happen when the poison accidentally escapes from the plant designed to enclose it, or when men enter such plant.

The commonest poison, by far, is carbon monoxide in different gaseous mixtures such as coal gas, producer gas, water gas and blast furnace gas, and the ways in which it causes injury follow a pretty constant pattern year by year. Accidental and undetected escape of gas from such plant will presumably always be a source of accident, particularly as in some cases (washed blast-furnace gas is one example) there is no smell to give warning that the gas is present. But accidents ought not to happen when it is clearly known that the gas is escaping. To quote an example: an accident occurred at a steelworks where the gas flues run below ground, and the access doors to these flues are in pits. A mild explosion at the time of lighting a furnace had disturbed the luting round one of these doors, and after arranging for reduction of the gas pressure the foreman descended into the pit to lute the door afresh. He was fully aware that the door was leaking—it was for that very reason that he entered the pit—and, as for man he would have been expected to realise the danger, yet he did not put on the breathing apparatus that was at hand, and was dead in a few minutes.

There are two factors at work that will reduce accidents like this. New types of self-sealing explosion doors are coming into use, and more convenient, more comfortable and safer breathing apparatus is being introduced, consisting of a face-piece connected by flexible hose for attachment at suitable points to a fixed compressed air main lacing the whole plant.

A simple but sensitive test for carbon monoxide should prevent many accidents, and fortunately one will soon be available. The Chemical Inspectors therefore look forward to a future when big plants, such as blast furnaces, will be fitted at many points with automatic sampling apparatus that will detect and notify the presence of dangerous gas in any part of the plant. This is still a dream as far as carbon monoxide is concerned, but it is a very real fact on one plant where hydrogen sulphide is the danger.

The opening of plant containing poisonous gas must always be attended with some risk, unless breathing apparatus is worn. If the part to be opened is separated from the source of gas only by a valve, failure of that valve means almost certain accident, and the following case is quite typical. A bypass valve which had been repaired was to be returned to its position in a meter-house, and to prepare for this the stop-valves on each side of the meter were screwed down. Owing to wear on the shaft of one of the valve

Another aspect which counsels caution is that we have records of at least one death which we ascribed to the inhalation of particles of aluminium; and here are also some continental observations attributing harmful effects to the inhalation of such dust and, experimentally, the effects of alumina on tuberculous infections to which silicotics are so prone is not settled.

Evidently, intensive and intricate research on both the therapeutic and preventive sides on a considerable scale is required which is properly a matter for the Medical Research Council. The problem was therefore referred to Sir Edward Mellanby, and the Medical Research Council agreed to accept the responsibility for the prosecution of a very extensive programme of research, with which we will co-operate, of course, to the full. A start has already been made, and a number of firms and organisation are co-operating or have expressed their willingness to do so.

For several years past experimental work on the production of asbestosis has been carried out at the British Post Graduate Medical School by Professor E. J. King. This research is financed by Turner Brothers Asbestos Company Limited, who have also placed the resources of their Research Department at the disposal of the investigators. Experiments have been conducted with rats and rabbits in which short-fibre asbestos (2.5μ) and long-fibre (15μ) have been introduced into the lungs. In parallel experiments aluminium was mixed with the asbestos to study any retarding effect it might have on the development of pathological lesions due to the asbestos. The long-fibre asbestos showed evidence, on histological examination of the lungs, of a more pronounced pathological effect than the short. There was more blockage of bronchioles, more retention of the asbestos in intra-alveolar nodules, more reticulin fibrosis, and not much foreign-body giant cell reaction. With the short-fibre asbestos, there was less blockage, the nodules were smaller and interstitial rather than intra-alveolar, and foreign-body giant cell reaction was pronounced with evidence of active elimination of the dust. Aluminium modified this histological picture only slightly, but the rats receiving aluminium plus asbestos appear to live longer than those receiving asbestos alone.

Special Investigations.

The work of the Medical Branch seems to increase steadily year by year in range and amount. It is not possible to detail it fully here, but an attempt to give an idea of the range was indicated in the Annual Report for 1943 (page 44). Mention should be made, however, of some of the more important investigations commenced, carried on or completed during the year under review. These included the enquiries into the health of welders and foundry workers, now in an advanced state; the effects of work with electrically driven vibrating tools; other subjects studied were the crushing of basic slag; "trigger finger"; the suitability of welding as an occupation for workers disabled by silicosis or other form of pneumoconiosis; the possibility of hydatid infection in wool sorting (negatived on investigation); the effects of work involving exposure to chloroform and ether; an alleged risk of silicosis from the grinding of card clothing (disproved by investigation). Several enquiries involved long and intricate investigation, some were carried out in collaboration with other workers in this field, and the detailed results will be published elsewhere. A number of papers on industrial health subjects were contributed by members of the Branch to medical periodicals.

With the return of doctors from war service the Branch will soon be brought up to its authorised establishment, and it should be possible to press on with this important section of the work.

TABLE III.

INDUSTRIAL DISEASES.

Particulars of the cases of industrial poisoning or disease notifiable under Section 66 of the Factories Act, 1937, and under Section 3 of the Lead Paint (Protection against Poisoning) Act, allowing comparison with previous years, are given below.

Disease and Industries	Reported Cases								
	1900	1910	1920	1930	1940	1942	1943	1944	1945
Lead Poisoning ...	1,058 ³⁸	505 ³⁸	289 ⁴⁴	265 ³²	108 ⁶	72 ⁸	46 ⁶	41 ⁸	45 ⁸
1. Smelting of Metals ...	34 ¹	34 ¹	45 ³	37 ¹	11	3	7 ¹	2	5
2. Plumbing and soldering ...	9	25 ¹	3 ¹	6 ¹	4	3	1	1	1
3. Shipbreaking ...	—	—	3	24	0	3	—	1 ¹	—
4. Printing ...	18 ²	33 ⁴	9	7	—	1	1	—	—
5. Other contact with molten lead ...	30 ¹	17 ¹	13 ²	10 ³	21 ¹	13	9	6	1
6. White and red lead works ...	377 ⁶	44 ¹	28	5 ¹	17	7 ¹	5	2	—
7. Pottery ...	210 ⁶	78 ¹¹	25 ¹²	23 ¹⁰	6 ³	6 ³	2 ³	—	—
8. Vitreous enamelling ...	11	17	2	2	1 ¹	—	—	—	1
9. Electric accumulator works ...	33	31	47 ³	36	15	10	4	3	10
10. Paint and colour works ...	56 ¹	17 ¹	9	6 ¹	7 ¹	1	4	5	6
11. Coach and car painting ...	70 ⁶	70 ⁸	13	10	—	—	1	1	1
12. Shipbuilding ...	32 ²	21 ³	9	5 ¹	1	5 ¹	—	—	1
13. Paint used in other industries ...	50 ⁵	51 ³	10 ¹	5	5	3	2	1	—
14. Other industries...	128 ⁷	67 ³	27 ¹	16 ¹	4	11 ²	6 ¹	11 ²	—
15. Painting of buildings ...	—	—	46 ²¹	66 ¹³	10	6 ³	4 ¹	8 ³	—
Phosphorus poisoning ...	3	—	—	—	—	—	—	1	—
Mercurial poisoning ...	9	10 ¹	5	3	5	1	4	7	—
Arsenical poisoning ...	22 ³	7	3	1	2 ²	6	2 ¹	3	—
Manganese poisoning...	—	—	—	—	—	—	1	1	—
Carbon bisulphide poisoning ...	—	—	—	—	1	—	—	1	—
Aniline poisoning ...	—	—	—	24	64	204	79	55	31
Chronic benzene poisoning ...	—	—	—	—	3 ³	1 ¹	1 ¹	1 ¹	—
Toxic jaundice ...	—	—	6	—	20 ⁴	27 ⁸	16 ⁴	12 ¹	—
Toxic anaemia ...	—	—	—	—	—	14 ³	7 ⁴	12 ⁶	—
Compressed air illness ...	—	—	—	—	3 ¹	—	1	1 ¹	—
Anthrax ...	37 ⁷	51 ⁸	48 ¹¹	43 ⁶	37 ⁸	25 ¹	17 ⁴	8 ³	—
1. Wool ...	10 ⁴	28 ³	25 ⁷	13 ¹	17 ³	7	6 ¹	3 ¹	—
2. Horsehair ...	12 ³	6 ¹	5 ¹	1	2	2	—	1	—
3. Hides and skins ...	9 ¹	14 ³	17 ³	24 ⁴	13	15 ¹	8 ²	4 ²	—
4. Other industries...	6 ¹	3 ³	1	5 ¹	5 ³	1	3 ¹	—	—
Epitheliomatous Ulceration ...	—	—	45 ¹	194 ³⁸	166 ¹⁸	113 ⁸	160 ¹⁵	205 ²⁰	21
1. Pitch ...	—	—	32	44 ¹	85 ¹	52	54	99 ¹	8
2. Tar ...	—	—	10 ¹	53 ⁹	34 ³	33 ³	57 ¹	61 ³	9
3. Paraffin ...	—	—	3	—	1	—	1	—	—
4. Oil ...	—	—	—	97 ²⁶	46 ¹¹	28 ⁶	48 ¹⁴	45 ¹⁷	30
Chrome Ulceration ...	—	—	126	95	121	89	226	121	9
1. Manufacture of bichromates ...	—	—	77	6	14	14	9	12	1
2. Dyeing and finishing ...	—	—	43	15	6	2	—	4	—
3. Chrome tanning...	—	—	4	5	4	4	7	2	—
4. Chromium plating ...	—	—	—	57	57	24	23	18	38
5. Other industries...	—	—	2	12	40	45	187	85	45

The figures in parentheses refer to cases, the figures in italics to deaths. Total cases in 1945 are 21.

This recalls the experience of the Medical Branch some years ago (1930-31) when somewhat similar effects on exposed mucous membranes were found in a small group of men exposed to oil fuel soot in their work of cleaning boiler flues of oil burning ships. A sample of this soot was examined at the time by the Government Chemist and was found to contain 40 per cent. of water soluble iron sulphate—derived from the sulphur of the oil fuel. This, on burning, would be converted into sulphuric acid and is then neutralised by the iron in the flues. In contact with water the soot was strongly acid and this was thought to be the cause of the irritant effect on mucous membranes.

Pneumoconiosis.

This subject was discussed in some detail in the previous report with regard to the effect of preventive measures as disclosed by examination of the available data. The tables set out below have been brought up to date by the inclusion of particulars of 508 deaths during the year from silicosis with tuberculosis, 11 deaths from asbestosis or asbestosis with tuberculosis, 10 deaths from byssinosis, and 75 from other forms of pneumoconiosis, that is to say, a total of 604 deaths from all forms of pneumoconiosis.

TABLE V.
CASES INVESTIGATED UP TO END OF 1945.

	Number of Deaths	Average age at Death	Duration of Employment in years		
			Longest	Shortest	Average
SILICOSIS.					
Pottery :—					
Silicosis	432	60.2	62.0	2.8	38.8
Silicosis with Tuberculosis	359	55.1	67.0	5.0	34.6
Sandstone :—					
Silicosis	183	58.4	60.0	9.0	39.1
Silicosis with Tuberculosis	190	56.2	55.0	5.0	37.0
Grinding of Metals :—					
Silicosis	85	57.7	56.0	14.0	35.9
Silicosis with Tuberculosis	177	53.5	53.0	2.8	32.8
Sandblasting :—					
Silicosis	54	48.5	28.0	1.7	12.0
Silicosis with Tuberculosis	85	48.1	46.0	2.0	12.7
Manufacture of Scouring Powders :—					
Silicosis	12	38.1	37.0	2.3	8.4
Silicosis with Tuberculosis	6	40.8	11.2	2.0	7.0
Miscellaneous :—					
Silicosis	136	53.5	57.0	1.5	22.3
Silicosis with Tuberculosis	126	50.1	50.0	0.7	24.6
Total :—					
Silicosis	902	57.6	62.0	1.5	34.1
Silicosis with Tuberculosis	943	53.4	67.0	0.7	31.3
ASBESTOSIS.					
Asbestosis	134	46.9	48.0	0.5	14.9
Asbestosis with Tuberculosis	67	39.0	29.0	0.8	10.2

TABLE VI.

DEATHS FROM FIBROSIS OF THE LUNG, INCLUDING SILICOSIS, ASBESTOSIS, PNEUMOCONIOSIS AND BYSSINOSIS (ENGLAND AND WALES).

1940-1945.

	1940	1941	1942	1943	1944	1945
SILICOSIS :—						
1. Refractories industries	16	12	7	7	6	4
2. Pottery, Manufacture of	53	45	47	41	32	2
3. Sandstone Quarrying and Dressing	42	24	14	24	26	2
4. Sandstone masons	67	58	40	53	31	4
5. Metal Grinding	24	13	13	11	7	1
6. Sandblasting	13	4	4	6	7	—
7. Steel dressing and cleaning of castings	4	9	9	4	10	—
8. Stone, pebble, flint and sand crushing	5	1	2	1	4	—
9. Scouring powders, Manufacture of	—	2	—	1	1	—
10. Abrasive wheel Manufacture	—	—	—	1	1	—
11. Glass cutting and bevelling	—	1	2	—	—	—
12. Millstone dressing	—	—	1	—	—	—
13. Slate quarrying and dressing	7	6	4	6	7	—
14. Granite quarrying and dressing	1	1	3	2	—	—
15. Tunnel mining (Sewage works, etc.)	2	—	5	4	4	—
16. Coal Mining	232	196	230	276	277	32
17. Gold Mining (South Africa)	10	7	7	4	9	—
18. Tin Mining	21	17	12	14	11	1
19. Iron ore (haematite) mining	20	4	7	5	7	—
20. Lead mining	—	1	3	1	1	—
21. Copper mining	—	1	2	1	—	—
22. Barytes mining	3	3	—	4	—	—
23. Clay mining	—	—	—	1	—	—
24. Mining Engineers	—	—	3	1	—	—
25. Miscellaneous	2	1	2	2	4	—
Total—Silicosis	522	406	417	470	445	508
ASBESTOSIS	11	17	11	8	10	11
PNEUMOCONIOSIS :—						
Coal Mining	—	—	—	—	34	6
Other Industries	—	—	—	—	3	11
BYSSINOSIS	—	—	6	7	1	10
OTHER CASES OF FIBROSIS	650	461	443	493	531	529
GRAND TOTAL	1,183	884	877	978	1,024	1,138

Dermatitis.

There was a decrease of over two thousand in the cases of dermatitis (5,99 voluntarily reported in 1945). Reference to current figures for compensation for dermatitis would give the clue as to whether a smaller proportion than formerly of such cases was being notified to the Factory Department by the present voluntary system but such figures are not yet available. There has been, however, nothing to suggest that the co-operation of firms in the voluntary reporting of cases of dermatitis has slackened.

As might be expected from the events of 1945 there were fewer cases from industries closely connected with munitions of war and the bulk of the two thousand decrease was accounted for by the returns from (1) engineering (mechanical) (969), chemical manufacture (including explosives and she