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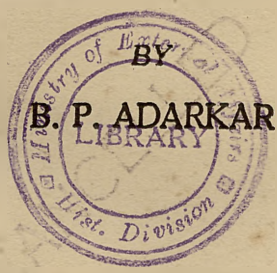
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B. P. Adarkar

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REPORT
ON
LABOUR CONDITIONS IN
THE GLASS INDUSTRY



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PREFACE.

The Tripartite Labour Conference at its meeting in September 1943 recommended the setting up of a machinery to investigate questions of wages and earnings, employment and housing, and social conditions generally, with a view to provide adequate materials on which to plan a policy of social security for labour. In pursuance of that resolution, the Labour Investigation Committee was appointed by the Government of India by Resolution No. L.4012, dated the 12th February 1944 to carry out the investigations. The Committee was instructed to extend its investigations generally to all industrial and semi-industrial labour covered by the Royal Commission on Labour in their Report, with the addition of certain other categories. The Committee was asked by the Government of India to decide in each case the most suitable manner of conducting the enquiry. The Government, however, considered that the method of enquiry should not merely consist of sending out questionnaires to Government agencies and Employers' and Workers' Associations, but should also comprise specific enquiries in individual concerns based on representative sampling.

2. In India, in spite of the quite comprehensive enquiries made by the Royal Commission on Labour and a few Committees appointed by the Provincial Governments, there have remained large lacunae in regard to information on labour conditions in several industries. In particular, broadly speaking, the method of direct enquiry on the spot has not been adopted on a sufficiently wide scale so as to cover the entire industrial structure. Moreover, certain industries, like cotton textiles and coal mining, have received greater attention than others, and even as regards these industries, comprehensive information on an all-India basis has not been available. With a view to making up this deficiency as well as to bringing the available information up to date, the Committee decided that *ad hoc* surveys should be carried out in various industries so as to secure a complete picture of labour conditions prevailing in each: The following industries were selected for the purpose:—

A. *Mining*. (1) Coal. (2) Manganese. (3) Gold. (4) Mica.
(5) Iron Ore. (6) Salt.

B. *Plantations*. (7) Tea. (8) Coffee. (9) Rubber.

C. *Factory industry*. (10) Cotton. (11) Jute. (12) Silk. (13) Woollen. (14) Mineral Oil. (15) Dockyard. (16) Engineering. (17) Cement. (18) Matches. (19) Paper. (20) Carpet weaving. (21) Coir matting. (22) Tanneries and Leather Goods Manufacture. (23) Potteries. (24) Printing Presses. (25) Glass. (26) Chemical and Pharmaceutical works. (27) Shellac. (28) Bidi-making, Cigar and Cigarette. (29) Mica Splitting. (30) Sugar. (31) Cotton, Ginning and Baling. (32) Rice Mills.

D. *Transport*. (33) Transport Services (Tramways and Buses). (34) Non-gazetted Railway Staff.

E. *Other types of labour*. (35) Port Labour. (36) Municipal Labour. (37) Central P.W.D. (38) Rickshaw Pullers.

3. The main conception on which the *ad-hoc* surveys have been based is that information should be collected on the spot by direct enquiry conducted with the help of the Committee's own staff and that this information should, as far as possible, conform to the sampling methods widely adopted in such work. Owing to great variations in the character of the different industries, however, there could not be a complete uniformity in regard to the methods which had to be adopted to suit the peculiarities of particular industries and centres. For instance while there are only a few centres and units in certain industries such as potteries, mineral oil, gold, etc., in other industries, such as

textiles, engineering, transport services, plantations, tanneries, bidi-making, etc., a very large number of centres and units in different provinces (and even states) had to be covered. Moreover, some of the industries are modern industries of the large-scale type, wherein factory legislation applies more or less entirely, while others are indigenous handicrafts or small-scale industries, where factory legislation is either inapplicable or partially applicable. Thus, information has not been uniformly available in advance as regards the size, location and ownership of industrial units, such as is necessary before decisions for sampling are taken. Consequently, the technique of representative sampling had to be modified and supplemented so as to obtain whatever information of a reliable character was available. As far as possible, however, in all industries important centres were covered. In each of these centres units were chosen on a sample basis, but it was possible in a few centres to cover all units. The final lists of centres of survey and individual establishments were made out in the light of the impressions gathered during the course of the preliminary tour and in consultation with local authorities. The guiding principle in the selection of centres of survey was to make the survey regionally representative so as to discover differences in the conditions of labour in the same industry in different parts of the country. The selection of individual concerns was generally based on considerations, in order of importance, of (a) size, (b) ownership (private or limited) and (c) whether subject to statutory regulation or not. In this connection, it may be stated that the Committee were greatly handicapped in sampling the units owing to the lack of complete information regarding location and number of units in the selected industries. Unfortunately there are no all-India employers' organisations in some of the organised industries, nor are the statistics maintained by the Central and Provincial Governments at all complete. Moreover, in certain unorganised, industries such as shellac, carpet-weaving, bidi-making, etc., owing to their very nature, no such information could have been readily available in advance. In certain cases therefore, owing to these difficulties as well as transport difficulties and other exigencies, the sampling could not be fully adhered to. Nevertheless, the Committee have been anxious to gather in the maximum possible information in the limited time at their disposal and with a view to this, they have cast their net as wide as possible. The main instruments of the *ad hoc* survey were the Questionnaires. These were of two kinds :—(a) the main *ad hoc* survey questionnaire on points likely to be common to all the industries surveyed, and (b) supplementary and special questionnaires in respect of certain industries such as plantations, mines, railways, rickshaw pullers, port labour municipal labour, glass, shellac, mica, etc. The main questionnaire was accompanied by a tabular form for entering wage data and this was used wherever possible. In the case of certain surveys, however, such as salt, paper, cotton, woollen and jute, textiles, dockyards, silk, cement and gold mining, it was possible to conduct a wage survey on a sample basis. The chief method of collection of data was by personal investigation of industrial establishments, examination of their records and contact with labour in factories and homes. The information thus collected was supplemented and checked with replies to the Questionnaires received.

4. For the purpose of conducting enquires, a sufficiently large field staff, consisting of 16 Supervisors and 45 Investigators, was appointed. Before the commencement of field work, all the Supervisors (with the exception of those working in Bengal) were called to the Committee's headquarters at Simla and given detailed instructions on the technique and scope of the enquiries to be conducted by them, the manner in which they were to submit their data, and the centres and units which they were to investigate. In addition, both Supervisors and Investigators were provided with written instructions regarding the

use of questionnaires, sampling of concerns. (where this could not be done in advance), filling of the wage forms, etc. In particular, they were asked not only to collect information on the spot but also to draw upon every other possible source of information. In doing so, they were required to distribute copies of the questionnaires in the centres assigned to them not only amongst the sampled units but also amongst Employers' and Workers' associations in the industry and such other associations and individuals as were likely to be interested in the subject. They were also asked to get into touch with officials of Central and Provincial Governments connected with labour and obtain such facilities as might be necessary in doing their work.

5. As far as the field work in Bengal was concerned it was done by the staff of the Committee under the guidance and supervision of the Labour Commissioner, Bengal, and his subordinate officers. Members, however, paid visits to selected centres and units in Bengal to obtain first-hand knowledge of local labour conditions.

6. The Committee's survey covered all Provinces with the exception of the North West Frontier Province where none of the Industries selected for survey was sufficiently important. It extended to many of the Indian States also, such as Kashmir, Patiala, Gwalior, Baroda, Mysore, Sandur, Travancore, Cochin, Bundi, Indore and some of the States of the Eastern States Agency. No survey was undertaken in the Hyderabad State as that State preferred to appoint its own Labour Investigation Committee, with terms of reference identical to those of this Committee, for enquiry into local labour conditions.

7. In dealing with the *ad hoc* survey work, several courses were open to the Committee :—(i) the Committee, as a whole, to study each industry, (ii) the surveys to be distributed region-wise and each Member put into charge of a region, and (iii) each Member to be entrusted with a few surveys throughout India. With a view to speedy and efficient work, the third course was actually adopted. This departure from the usual procedure of the Committee as a whole dealing with the work was necessary in view of the immensity of the task and the necessity of maintaining an all-India perspective. Moreover, it was felt that this procedure would enable Members to make a specialised study of labour conditions in individual industries in different parts of the country. It was also felt that the peculiar problems of industrial labour had more an industry-wise than a region-wise dispersion and that the procedure would be helpful to future legislation which has to take into consideration the diversified conditions of each industry. It will be seen, however, that in the Reports the factual material has been presented both on an all-India and on a regional basis.

8. Thanks and acknowledgments are due to Provincial Governments, State Authorities, Labour Commissioners (and particularly the Labour Commissioner, Bengal), Directors of Industries, Chief Inspectors of factories, Port authorities, local bodies, employers' and workers' associations, managements of the units surveyed and all others who rendered help in the collection of the data presented in these Reports.

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CHAPTER I.—INTRODUCTION.

I. *Economic Background.*—Glass manufacture has been known in India since time immemorial, but it assumed the character of a modern industry only very recently, during the war of 1914-18, when Indian manufacturers made considerable efforts to fill the partial void created by the stoppage of imports from Czechoslovakia, Belgium, England and Germany. With the cessation of hostilities in 1918, however, imports from abroad rapidly increased in volume and the infant industry, though narrowly escaping an early death, had a somewhat rickety existence till the outbreak of the present war. The only branch of the industry which held its own against foreign imports was bangle manufacture in Firozabad, for the home-made bangles competed successfully with the Japanese and Czechoslovakian varieties. Despite adverse circumstances, a number of new factories for the manufacture of hollow-ware and bottles and one for the manufacture of sheet-glass—the only one of its kind in Asia—were established in the period intervening between the two wars. The total value of blown glassware and bangles was estimated by Sir Alfred Chatterton in 1919 at Rs. 40 lakhs a year. This had increased to about Rs. 120 lakhs by 1939. In September 1939, therefore, the industry was not as unprepared as in 1914 to exploit the advantages of an incidental war-time protection. The heavy demand from the Army for hollow-ware, lampware, tableware, etc., gave a powerful fillip to the industry and almost all units have been working to their maximum capacity in recent years. Besides meeting this demand and catering for the needs of local markets, the Indian glass industry has been able to increase exports to foreign countries by about 245 per cent. within a short period of two years (1939-41). The value of glassware exported from India during 1938-39 was Rs. 1,68,991 and this rose to Rs. 583,774 in 1940-41. As for the imports the following table gives consolidated figures for 1909-14 and succeeding years :—

TABLE 1.

Import of Glass and Glassware into India.

(Value in Rs. Thousands).

	1909-10 to 1913- 14 (aver- age).	1914-15 to 1918- 19 (aver- age).	1919-20 to 1923- 24 (aver- age).	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44
Bangles ..	91,55	31,59	74,88	24,20	18,40	6,86	2,18	10	..
Bottles & Phials.	12,56	25,14	37,80	27,95	20,50	24,77	13,97	5,59	3,60
Beads & Fa- lse pearls.	24,67	17,05	37 12	13,38	8,50	3,45	1,34	11	..
Sheets & Pla- tes.	17,46	20,69	42,98	23,70	19,94	17,53	21,71	9,94	1,94
Funnels, Glo- bes, etc.	12,44	14,21	18,75	5,17	3,78	2,02	2,67	1,58	5,87
Other Glass ware.	3,24	19,94	41,52	30,72	30,56	31,63	23,68	8,32	4,04
	1,61,92	1,28,02	2,53,05	1,25,12	1,01,77	86,26	65,55	25,64	15,45

(From the *Review of Trade*,—various years).

The above facts lead us to the conclusion that the glass industry is, at present at any rate, in a prosperous condition and that given suitable protection in the post-war period against possible foreign dumping, it is bound to develop rapidly to meet the increased demands of a reconstructed India. At present, in spite of the availability of cheap labour, the average cost of production of glassware in India is much higher than what it would be if the basic raw materials were used in proper proportion and the pot furnaces which consume excessive coal, replaced by modern tank furnaces. It is estimated that by effecting these changes, the cost of production would go down by over 30 per cent. besides improving the quality of the manufactures.

II. *Structure and Location.*—The Indian glass industry falls into five broad divisions according to the nature of goods produced viz., (i) Bangles, (ii) Sheet Glass, (iii) Hollow-ware, (iv) Bottles, and (v) Fancy goods. Bangles are produced both on factory and cottage basis. The old cottage industry is mainly located at Firozabad in the United Provinces. The *shishgars* of this town have an ancient tradition behind them and their skill and dexterity in putting on the market fresh varieties every season has enabled them to carry on their small-scale operations even in the present machine age. There are a number of large establishments also, where bangle spirals are manufactured, though the joining and polishing of the glass rings are done in innumerable small shops in the town. Sheet glass is manufactured in the U. P. Glass Works at Bahjoi and this is the only factory of its kind in Asia. As for hollow-ware, this is being manufactured in a large number of establishments in the U. P., Bengal, Bombay, the C. P. and the Punjab and to a smaller extent in Madras also. The main types of goods manufactured are : glasses, tumblers, jars and lampware. Some of these concerns have effected considerable technical improvements with the technical help of the Government of India and the Provincial Governments. Among the larger establishments producing hollow-ware are the Ganga Glass Works Ltd., at Balawali, the Ogale Glass Works at Karad, Bombay, the Paisa Fund Glass Works at Talegaon, near Poona and the Bombay Glass Works, Bombay. Similarly, bottles are also being produced in a number of factories and some of them have automatic and semi-automatic machines for blowing glass. Apart from the above, the Glass Technology Section of the U. P. Government has trained a number of men in the manufacture of fancy goods. There is also an old centre in the district of Hathras (U.P.) where fancy goods like glass buttons, pendants, animal figures and a crude variety of beads are made.

There can be little doubt that an industry which enjoys the triple advantages of a sufficient labour supply, availability of most of the raw materials and an extensive home market has the capacity to develop at an accelerated pace, if it is given a measure of protection against the more efficient foreign producer. The consumption of glass *per capita* in India is one of the lowest in the world and its inevitable increase will expand the home market considerably. Moreover, the skill of Indian blowers is in no way inferior to that of the foreigner and the quality of goods can be improved, if the factories are modernised. Mr. Dixon states : “The poor quality of much of the glassware produced in this country is largely due to the lack of supervision and not necessarily to any want of skill on the part of the glass blowers. The management as a rule, does not insist upon a high standard or offer the blowers any inducement to maintain one, and almost any article however badly made, will usually be accepted. It is not surprising, therefore, that the blowers themselves are not as particular as they might be.”

CHAPTER II.—SURVEY OF LABOUR CONDITIONS.

General.—Some of the problems which are of common importance to the industry as a whole and are not peculiar to any particular region may be conveniently stated here. Among such topics are legislation affecting the industry, total employment, processes of production, nature of accidents, occupational and other diseases and some special problems such as unhealthy working conditions and high labour turnover.

I.—Applicability and Enforcement of Labour Legislation.

The Factories Act.—The Factories Act obviously applies to all glass factories using power and having more than 20 employees. However, in some Provinces, e.g., the United Provinces, the Factories Act has been made applicable to glass factories having 10 or more employees, subject to exemptions under certain Sections of the Act. Both in large and in small factories, however, the Factories Act is constantly violated, so far as labour matters are concerned. In some cases, there is splitting up of processes, both with a view to reduction of the number of workers to a sufficient level at which the Act would not apply, and with a view to evasion of the Act in respect of workers not directly concerned with mechanical processes. The provisions of the Act which are mostly frequently infringed are those relating to children and adolescents. In respect of Section 50 of the Act prohibiting employment of children below 12 years, practically everywhere children were found to be employed during the course of our investigations. What is more, they were made to work long hours, in spite of Section 54 which limits children's hours of work to 5 and spreadover to 7½ hours. Children are mostly employed as mould-holders, neck makers, bangle-joiners, helpers and coolies, and although their work is no less efficient or strenuous than that of adults, they are paid at lower wages on the plea of experience, age and requirements.

Unfortunately, the Employment of Children Act, 1939, does not apply to the glass industry, although it applies to 9 other industries of the nature of cottage industries. It cannot be said that the conditions of work in that section of glass industry which is run on a cottage basis (mainly confined to bangle manufacture) are better than in any of the other 9 unregulated industries covered by the Employment of Children Act. It was found that little children at tender ages were working near the *chulas* as also in dingy workshops where the work of joining of bangles was carried on over kerosene lamps or gas flames in rooms which knew neither ventilation nor light. No doubt, in many cases, the children earned good wages for hard work, but their health and general physical development were extremely unsatisfactory. In the course of our investigations, several children were found with burns and cuts on their bodies which were covered with bandages. The children were made to work in spite of such handicaps, often as a result of an understanding between employers and parents. In view of all these facts, there seems to be no reason why the Employment of Children Act should not be made applicable to glass manufacture as well.

The Workmen's Compensation Act.—The commonest accidents in the glass industries are those arising from cuts and burns, as will be seen later. Unfortunately, a majority of such accidents are of short duration and the "waiting period" of 7 days under the Workmen's Compensation Act enables the employer to escape all liability. When the worker is laid up, as a consequence of the burns or cuts, he not only does not get any compensation but loses his wages as well for the period of absence from work. Even when accidents are

serious, employers escape liability by stating that the workman was "under the influence of drink or drugs" or that the accident was due to his own wilful negligence, etc. In the rare cases in which compensation is paid, it falls very much short of the amount laid down in the Act. More often than that, however, the worker is bundled off to his village, far from the scene of occurrence.

Maternity Benefit Acts.—In most Provinces, no maternity benefit is paid in spite of there being a Provincial Act in operation. Either widows are employed, or women workers are dismissed at the first sign of pregnancy. Apart from this, generally women workers and sometimes even the employers appear to be ignorant of the existence of such an Act. Some employers naively stated that pregnant women worked even up to the last moment and returned to work a fortnight after confinement.

Inspection.—The main difficulty in the case of this industry, as in others, is that factory inspection is faulty, superficial and hopelessly inadequate. The factory inspectors appeared to be more concerned with less important matters like whitewashing, and technical aspects of factory construction than with human aspects of labour. Employment of children and adolescents, hours of work, payment of wages, accidents and such other matters claim less attention. This is probably due to the fact that inspectors have hardly any time to go into details of law in respect of all these matters and it is to be feared that, in many cases, their training in law and labour matters is not so adequate as in engineering and science. The inadequacy of the factory inspectorates in the various Provinces has been shown clearly in the records of visits paid to the glass factories under investigation. In some Provinces certain factories were never visited at all, or visited once in two or three years. It is obvious that if the factory legislation is to bear any fruit, its enforcement requires an adequate number of inspectors in each Province, with proper training and vigilant interest in labour welfare.

II.—Processes of Production and Types of Workers.

The processes of production and types of workers are different in the three main sections of the industry, viz., blownware manufacture, sheet glass manufacture and bangle manufacture. The variety of blownware has increased considerably in recent years but the processes of production are more or less the same in all factories producing hollow-ware. There is only one factory producing sheetglass and most of the processes therein are mechanised. The Manufacture of bangles falls into two sub sections: (i) in cottage-shops, and (ii) in factories where glass is drawn into spirals and later cut and joined.

Blownware.—While most of the factories manufacture glass from the basic raw materials—silica, soda ash, calcium oxide, borax and saltpetre, there are a few which merely purchase broken pieces of glass in the market and re-melt them. Usually, however, both the methods for the preparation are stored in a mixing room in which a few workers known as "mixer wallas" or simply "mixers" weigh out these in prescribed proportions and put them in big mixing troughs. These troughs are usually wooden boxes but in some concerns concrete batch mixers have been built. Mixing is done by hand though in a couple of factories screw-mixers have been provided. In this connection, Mr. Dixon writes: "The thorough mixing of the batch is a very important operation as it ensures that all the silica is in contact with the fluxing agents and that all the small quantities of oxidising and colouring agents

are properly distributed. Efficient mixing, therefore, assists in the ready melting of the batch and produces even colour distribution and fining. Sufficient attention is usually not paid to it".* Obviously, hand-mixing is responsible for this. The mixture, which is technically known as the "batch" is transferred to the pot or tank furnace. Broken pieces of glass (or "cullet") are also put in the furnace along with the batch. The pots are fired from below and heated to a temperature of 1300°C when the batch and cullet are converted into a homogenous molten mass. The next is the "finding" process which consists of removing the small seed bubbles by allowing the melted glass to remain at a temperature of 1250°C for about 2 hours. It is further cooled down to about 1000°C before blowing operations are started.

The blower has 4 or 5 men to assist him in his work and together they work as a well-combined team. The assistants of the blower are two helpers, a moulder, a "Cracker-off" and a neck-man, if bottles are to be manufactured. Molten glass is taken out of the furnace by helpers through small openings in the furnace known as "windows". By a careful manipulation of the blow-pipe, the helper takes out only the required quantity of glass at one end of the pipe and after blowing it a little, he gives the pipe to the blower who alternately swings it and blows the glass into shape. The shaped glass or "parison" is then put into the mould held in position by a moulder, and a final puff by the blower finishes his part of the task. The glass cools down inside the moulds taking the shape of the mould. The gaugemen then take the bottles to the neck-maker who works near another furnace and shapes the necks of the bottles. If lamp globes are manufactured, the parison made by the first helper is re-strengthened by a dip in the pot containing molten glass before the blower takes the blow-pipe. The remaining processes are the same here as in the case of bottles. The blownware thus obtained has to be strengthened by re-heating in another furnace known as the "annealing chamber". The globes, bottles and other ware are either fired directly by being put on the hearth of the annealing chamber or arranged in a drum which is put inside the furnace. After this, the fire is allowed to die out which ensures a gradual cooling down of the ware to the atmospheric temperature. The blownware is then removed and defective pieces are sorted out and the approved ones packed. Packing is done mostly by women packers in gunny bags or baskets. If, however, the edges have to be smoothed, there are a set of "grinders" to do the job. This is, of course, done after sorting. The annealing process is defective in almost all the factories, barring a few new ones which are equipped with continuous annealing "lehrs". A few factories have automatic and semi-automatic blow machines for blowing bottles. Only a semi-skilled helper is needed to complete the blowing process. In the Ogale Glass Works of Bombay, some semi-automatic suction-and-blow machines have been constructed to manufacture special types of globes which fit into the globe-holders perfectly.

Sheet-Glass Manufacture.—In the U.P. Glass Works Ltd., Bahjoi, most of the processes have been mechanised. The molten glass is produced in the usual manner in modern tank furnaces and is automatically drawn into sheets. These sheets are transferred by sheet-carriers from near the machine to cutting rooms where "glass cutters" cut the sheets into pieces as per requirements. These pieces are carefully packed by another set of workers known as "packers" into wooden boxes. A number of carpenters are employed to make such boxes and these, as well as the cutters, are employed on a piece-rate

* E. Dixon : *A Survey of the Indian Glass Industry*, p. 15.

basis. Apart from the categories of workers enumerated above, there are the technical hands on the machines like drivers, fitters, firemen, blacksmiths, etc. In the U. P. Glass Works, Bahjoi, some electricians and helpers are also employed. It is only in this concern that even technical staff are employed on daily rates.

Bangle factories.—Bangle factories are mainly situated in Firozabad. There are three main types of such workshops : (i) for the manufacture of glass and bangle rings, (ii) for the manufacture of bangle glass only, and (iii) for cutting and decorating only. It may be mentioned here that in Firozabad there is a marked sub-division of allied processes and each process is carried on under separate roofs. The first type of factories manufacture block glass which is re-melted by *shishgars* (*lit.* glass-makers) in their *bhattas* (ovens). In these concerns there are only a few categories of workers apart from the unskilled male and female coolies. The batch is prepared by mixers and melted in pot furnaces. Molten glass is ladled out in small quantities and moulded into blocks. Usually, no iron moulds are used. The moulder takes out some molten glass at the end of a long iron bar and shapes it into a block by pressing the cooling mass against a flat iron block known as "marver" with the help of a crude iron tool. If coloured blocks are required, the usual colouring agents are added to the batch.

The manufacture of bangles is a complicated task. First, a glass parison is prepared in the manner just described and then taken to the most skilled worker in the factory known as *tarwala* (thread-man). He sits in front of a furnace and manipulates the process of drawing out glass into threads of suitable thickness. He is assisted by another worker known as *Belanwala* (roller-man). The *tarwala* holds the rod at one end and heats the glass block or parison attached to the other end by putting that end inside the furnace. In the other hand he holds another long iron rod and when the parison becomes sufficiently viscous, he draws out the glass into a thread with the help of the rod. The thread is attached to an iron roller running transversely across the furnace though removed to its farther end. When the thread has thus been attached to the roller, the *belanwala* winds the roller rapidly with the help of a handle attached to it. By an arrangement, the roller is imparted a screw motion and the thread is wound on the roller in the form of a spiral. If a multi-coloured bangle is required, the original parison is first formed out of that variety of coloured glass which is to form the nucleus of the bangle. Later, small glass of other colours is welded on to its faces and this composite parison is manipulated by the *tarwala* as described above. When the entire roller has thus been wound up, the thread is cut and the roller removed from the supporting axles. By means of a hook, the glass spiral is removed and cut into open rings by scratching the entire length of the spiral with a piece of carborundum. The *tarwala* is the highest paid worker in the bangle factories and earns something like Rs. 200 per month. Glass spirals of uniform thickness can be obtained only if he maintains an even tension on the thread. Almost continuously, he moves the parison back and forth in order to maintain that evenness, and yet he is able to avoid giving jerks to the thread. The task of the *belanwala* though simple is by no means easy. The success of *tarwala's* efforts would be jeopardised if the roller is not wound at a very uniform speed. Once started, the process has to be carried on continuously for hours together, and for these two categories of workers there is not even a moment's respite. It is not surprising therefore, that many a *tarwala* and a *belanwala* faint at their posts in the course of the operation.

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The next process, viz., joining the ends of the ring by welding them together over the flame of a burner is carried on in a large number of subsidiary cottage shops, a description of which will be given later. The joined bangles are taken to glass bangle cutting and decorating factories. Here, skilled workers sitting in a series cut edges in the bangles by grinding them on rotating wheels. The painting of bangles is done by another set of workers sitting in a different apartment in the same building. The cut and decorated bangles are strung together in *todas* (bunches), each *toda* consisting of 288 bangles, and are put on the market for sale. In recent years the factories have produced bangles in another way also. At first a glass pipe is manufactured like any other hollow-ware and is then sent to *addas* (cutting shops). There are about 240 *addas*. The work is done on a piece-rate basis.

Cottage Shops.—Cottage Shops are spread throughout Firozabad and almost every house has one on the ground floor. There are three distinct types of such shops : (i) the *bhattas* of *shishgars* where bangles are manufactured in the traditional way, (ii) joining shops where the open ends of the glass rings are welded together, and (iii) shops for cutting edges, painting, enamelling and setting of facets. There are at present about 200 *bhattas* in Firozabad and in each one of these, four or five persons work, two of whom may be children. There is a marked specialisation of functions. Three of the five persons sit round a small furnace which has three windows one for each person. Block glass purchased from factories is re-melted in a pot put inside the furnace. One of the men takes out a small quantity of glass through the window and shapes it into a conical parison. This parison is passed on to the second man who re-heats it in the next section and when the edge of parison becomes sufficiently viscous, he draws it out into thin rods with the help of another iron rod. These glass rods may be 4 to 6 feet long and drawing them into uniform thickness is the most difficult process in this method of bangle manufacture. When multi-coloured bangles are to be made, a composite parison containing glass of different colours is prepared and the *tarwala* while drawing out the rods dexterously rotates the parison so that glass of all the colours may be drawn out. These rods are then cut into suitable lengths by scratching them with carborundum. Each one of these lengths goes to make a bangle. The third man puts these pieces into the hearth and when they have been heated to workable viscosity, the ends are joined together with the help of a pair of tongs. The same man gives the bangles a perfectly circular shape by straining them on crude anvils. The bangles are then thrown on the floor and later collected into baskets by small boys. In some of the *bhattas*, weldless bangles are also manufactured. The processes here are further simplified. A small quantity of glass is taken out at the end of a rod and when it is held vertically, the point of the rod pierces the glass. The ring is widened a little by suitably revolving the rod and then transferred to a wooden anvil. The rest of the process is the same as that for the welded bangles. If, however, some impressions are to be made on the outer side of the bangles, a carved wooden mould is pressed against the sides while the bangle is still on the anvil.

There are over 500 joining shops in and around Firozabad. Each shop is run by a *juraiwala* (employer of joiners) who is the proprietor of the shop. He employs workers known as *juraiyas* (joiners) on piece rates. The *juraiwala* obtains bangles on a contract basis and distributes these among the *juraiyas*. Kerosene oil is either supplied by the factory owners or purchased by the *juraiwala* in the market. Besides *juraiyas*, the *juraiwala* employs two other categories of workers—(i) *sadhaiyas* who heat the rings and

put the two ends close to each other and (ii) *pankhewalas* who work the bellows. Compressed air is blown by *pankhewalas* through kerosene or petrol and the resulting mixture of air and vaporised combustibles burns in burners placed in front of the *juraiyas*. Usually, however, ordinary kerosene lamps are used. A small blow-pipe is used to blow air through the flame of the burner and the resultant flame is directed at the ends of the bangle rings. When the ends soften they are joined together. It was found that children of tender ages, about 6 or 7 years old, are employed in these shops in large numbers, as *juraiyas*, *sadhaiyas* and *pankhewalas*.

Further processing of bangles is done in other shops and comprises cutting of edges, polishing, setting of facets and decorating in various ways. No attempt is made at standardisation of designs. On the contrary, every shop tries to put fresh designs on the market at frequent intervals. The process of cutting edges has been described already. As for painting and decorating, these are purely individual performances and the skill of the worker, gauged by the general acceptability of his designs, determines his wages.

III.—The Nature of Accidents.

The frequency of minor accidents like burns and cuts is very high in the glass factories. In the smaller establishments, most of the floor area under the shed is monopolised by the furnace around which helpers and blowers are constantly blowing molten glass and swinging the blow-pipes. For such operations the floor area per workers is too inadequate and a very large number of burns are caused in spite of the care with which the blowers swing their pipes. Sometimes, the moulder boy who holds the mould while the blower manipulates the parison, gets burnt if he is not very attentive. Serious cases of burns are not uncommon. The complications which arise in such cases due either to the non-ability of proper medical aid at the factory or to the negligence of the management in taking immediate steps, often make the case incurable. It was also found that in case of minor burns workers were not allowed paid leave nor were steps taken to get the wound dressed. In one factory a boy of 15 who had received severe burns was not allowed leave nor was treated with proper medicines or bandage. After a week, it was found that the wound had become septic and that if the operation which was to be performed later did not prove successful, there might be the necessity of an amputation! Cases of cuts are commoner still though the simple device of providing workers with wooden sandals would reduce their number considerably. As at present, most of the workers walk about barefooted and small pieces of glass which are scattered over the entire compound pierce the skill necessitating in some cases minor operation. Apart from this, women who are employed for sorting cullet, receive cuts quite often. In factories manufacturing glass tubes, red hot electric wire is employed to cut the tubings and as no gloves are given to the workers who manipulate the wires, cases of burns occur occasionally. Other types of accidents are not peculiar to the glass industry but occur in all factories where machinery is used. Thus, in one factory, a coalman, while climbing a wooden ladder to feed the gas producer, fell down and died instantaneously.

When accidents occur, the employers have recourse to the saving clause in the Workmen's Compensation Act, which removes the liability of the employer "in respect of any injury, not resulting in death, caused by an accident which is directly attributable to—(i) the workman having been at the time thereof under the influence of drink or drugs." Unfortunately, it is true that the drink evil is prevalent among the glass workers and this may raise a presumption, howsoever feeble, in favour of the employers' contention. More frequent, however, is the usual "square-up" method and the

worker is speedily removed from the scene after the payment of third-class fare and a small sum of money. If the worker belongs to the *pardesi* category, he goes back home which may be in a small village in the U. P. or Bengal, making further pursuit of the matter impossible and fruitless. Barring a couple of factories or so no special or even ordinary steps have been taken to protect the workers against cuts and burns which occur so often that it becomes a terminological inexactitude to describe them as "accidents".

IV.—Occupational Diseases.

A number of diseases from which glass workers suffer are occupational in character, although they may not find a place in Schedule III of the Workmen's Compensation Act. For instance, the incidence of asthma and bronchitis is very high among the blowers and helpers. The incidence is so serious that these workers have to stop work intermittently, more so in winter when asthmatic attacks become frequent. In the process of mouth-blowing, lungs are over-strained and in the course of a few years the blowers contract these diseases, which often ultimately develop into pulmonary tuberculosis. Moreover, the use of the same blow pipe by a number of workers spreads such contagious diseases from one to another. Other diseases to which the workers in the glass factories, particularly the helpers and blowers, are susceptible are pleurisy and pneumonia. During the rains it sometimes happens that, after working for some time in front of the furnaces, workers rush out from the shed into the rain and this has often caused them to remain confined to bed for weeks together. As long as there are no shelters for the workers inside the factory premises such cases are bound to occur. It is also reported that some cases of silicosis have been detected among the mixers who work in closed rooms in an atmosphere laden with the dust of silica, lime and other chemicals. Besides injuring the lungs, the dust affects the eyes of the workers also causing serious diseases in some cases. Still was found that only in a few factories mixers were provided with gloves and goggles. The incidence of eye diseases is particularly high among the factory workers in this industry as the glare of the fire and intense heat affects the eyes directly. Conditions in the small cottages are no better. In the cottage shops, all *churi* workers generally and *jurai* and *sadhai* workers particularly suffer from eye diseases. Cutting, joining, polishing, enamelling—all these processes put a heavy strain upon the eyesight—which in the case of small children of 6 or 8 years employed in large numbers in these cottages is jeopardised for ever in their infancy. No statistical information, however, about the incidence of such diseases could be collected as there is neither a periodical medical examination of workers nor do the dispensaries attached to glass works, wherever they are, maintain proper statistics of cases treated therein.

V.—Working Conditions.

It is intended to draw attention here only to some of the main problems in regard to the conditions of work both in the factories and cottage shops, more detailed treatment of the topic being postponed to subsequent Chapters on regional surveys.

It was found in a number of cases that the factories do not adhere strictly to the declared hours of work. Sometimes, it happens that though the workers report themselves to duty at the scheduled time for the beginning of a shift, the molten glass is not ready due to insufficient heating and bad stoking. They have to wait for an hour or two before the work can be started and this is compulsorily compensated for at the end of the shift when all the workers have to stay on even after the scheduled hours of work. For technical reasons

this is made obligatory. The quantity of glass prepared is so adjusted that it can all be blown if the existing strength of workers work for 8 hours. If the blowing operations begin after the delay of an hour or two, they have to be carried on till late in the evening in order that all the glass may be consumed. There would, of course, be less objection to this if payments for work beyond the scheduled hours were at the enhanced rate prescribed under Section 47 of the Factories Act. Actually, in most concerns, overtime work is not so paid for. Then, as Section 35 of the Act (relating to weekly holidays) has been made inoperative in regard to glass factories in some Provinces, it becomes well nigh impossible to find out if a worker is granted a holiday after 14 days' work. Sometimes, workers work on the 15th day under an assumed name while an absence is registered against their real names.

As has been said above, basic materials for the batch are stored in a specially protected room where they are weighed out in prescribed proportions and then dumped together in mixing troughs or boxes. In order to ensure a ready fusion of the batch into glass, it is necessary that the ingredients should be mixed thoroughly. This mixing operation is performed in closed rooms generally and there is no arrangement to remove the dust of silica and sand which is thrown up in the process. Nor, as stated earlier are the mixers provided with dust respirators, goggles or hand gloves. For a pretty long period every day they have to work in an atmosphere saturated with particles of silica which affect their lungs. The dust of lime affects the eye of the worker and as the worker employs naked hands to mix the batch, the presence of lime sometimes causes scalds. The conditions under the blowing sheds also need mention here. While some of the bigger establishments have adequate floor area per worker, in the smaller ones the furnace occupies most of the space and what is left for the workers is too inadequate. The blowers and helpers have to swing their blow-pipes and in such scanty accommodation the slightest inattention or negligence on their part causes burns to others working nearby. Moreover, though the glare of the furnace obviously affects the sight of the workers, they are not provided with eye glasses. Further, those factories which re-melt broken pieces of glass (cullet) employ women to sort out the clear pieces, but here too are not provided with gloves. Moreover, generally, workers walk about bare-footed and it is only in very few concerns that leather or wooden sandals are provided to the workers. These two features account for a large number of minor cuts which can be avoided easily and without incurring much expenditure. The work of the *tarwalas* and *belanwalas* in Firozabad bangle factories is particularly strenuous and the fact that they have to work continuously with close attention in front of a furnace causes some of them to faint after two or three hours of work.

Conditions in the cottage shops at Firozabad are even worse. It was about a decade back that Mr. Dixon (*op. cit.* p. 22) wrote : "The conditions under which the cottagers make bangles at Firozabad have to be seen to be properly appreciated. Most of the so-called cottage factories consist of small one-roomed buildings, the floors of which are almost entirely monopolised by an open furnace containing a number of fire-clay pots of various coloured glasses. None of the cottage bangle factories have chimneys and they are always full of smoke." The U. P. Government have since made efforts to improve conditions and have at their own expense provided five model buildings with non-draught ventilation arrangements for the *jurai* work. Needless to say, the model buildings accommodate only an insignificant proportion of the workers. The rest still continue to work in the ill-ventilated one-roomed

buildings. This is all the more serious in view of the fact that a large number of children are employed in these shops who have to work long hours in the smoky atmosphere. Nor are the conditions of work any better in the smaller *bhattas* where *shishgars* manufacture bangles with or without the aid of hired labour. Their work is entirely unregulated and children and adults, all work for as long as continuous work near open furnaces is possible. No wonder that when they retire and go back home, they purchase a bottle or two at the nearest liquor shop and forget their ennui in drunkenness.

VI.—Excessive Labour Turnover.

The problem of excessive turnover of labour is common to almost all the centres of glass industry in India and figures as high as 60 per cent. per month have been recorded in some concerns. The most important reason for this would appear to be the comparative scarcity of skilled glass factory labour today. During the war years, the industry has developed rapidly and the total employment in the industry has gone up by about 100 per cent. since 1939. Obviously the supply of skilled workers could not have increased in proportion to the increased demand for them. The establishment of a number of new factories in the U.P., Bengal, Bombay, Punjab, and Madras necessitated a re-distribution of the available supply of skilled labour and this has caused an unduly large turnover. The following table shows the increase since 1939 in the average daily employment in glass factories in the three leading glass-manufacturing Provinces.

TABLE 2.
Increase in Factory Employment during War time.

Name of Province.	Average daily employment.		Increase %.
	1939	1943	
U.P.	4,733	7,753	63.80
Bengal	2,280	4,990	118.85
Bombay	1,025	3,293	221.26
Total for British India	8,934	18,928	105.15

From the above table it is clear that the industry has made phenomenal progress since 1939, particularly in the two Presidencies of Bombay and Bengal, where employment in glass factories has gone up by 221.26 and 118.85 per cent. respectively. It was found in the course of the present enquiry that a fairly large part of the war-time recruitment in the Bombay and Bengal glass factories represented labour brought from the U. P. The blowers particularly were in great demand and a section of them have now become a migratory band moving from factory to factory at pleasure. The problem of turnover, however, is as acute in Bombay and Bengal as it is in the U. P. Imported labour has, in most cases, behaved in an irresponsible manner and caused loss to a number of firms. To solve the acute problem of the shortage of labour, factory owners in Bengal and Bombay are obliged to send recruiting agents to other areas with enough money to pay for the travelling allowances of the recruits as also their incidental expenses. When the recruits reach Bombay, they are often enticed away by agents of other employers for employment in their factories. In this manner, the latter escape the expenses and trouble involved in importing labour from other areas and at the same time are in a

position to recruit the required number of workers though on a somewhat higher wages! The process is repeated by another employer and a vicious circle has been set up from which for the present, there seems to be no escape for the employers. Nor can one legitimately expect a highly developed sense of gratefulness and responsibility among the workers when temptations are constantly put before them. The denudation of a large number of workers from the U. P. to other areas has created an acute shortage of labour in the factories there. As could be expected, each employer has tried to solve his own problems at the expense of his neighbours, causing a lot of turnover everywhere.

There are a few factors peculiar to the U. P. only. Quite 10 per cent. of the factory workers in Firozabad stay in their village homes 6 to 8 miles from the town. Everyday they perform the journeys to and from the factories on bicycles. It is stated that their main interest lies in agricultural operations and that they go to the factories merely to supplement their meagre earnings from the primary source, viz. agriculture. There are others who stay in the town itself but have strong agricultural ties. Both these types of workers go back to agriculture in the sowing and harvesting seasons.

A considerable amount of turnover is also being caused at present due to an irregular supply of coal and raw materials to the factories. Sometimes, it happens that a factory working to maximum capacity has to stop work suddenly because supplies of coal and materials are held up owing to transport difficulties. Often, when the chances of an early delivery of coal to a factory are small, there are dismissals *en masse*. In such circumstances services only of the superior technical staff are retained. All these factors have a cumulative effect and push up the figures of labour turnover to unprecedented heights.

CHAPTER III.—THE UNITED PROVINCES.

The glass industry of India is concentrated mainly in the United Provinces and of the average annual total production of glass goods estimated at Rs. 1.2 crores in the years immediately preceding the outbreak of the present war, the U. P. contributed about Rs. 1 crore worth of goods. The most important section of the glass industry in this Province is the manufacture of bangles in the small town of Firozabad. "So complete is the concentration of the bangle industry at Firozabad that practically no bangles other than the indigenous *desi* bangle of the cottage worker are made elsewhere in India."* The traditional art of the *shishgar* and his ability to cater for individual requirements has enabled him to oust powerful rivals in the bangle trade. In the other branches of the industry also, viz., the manufacture of sheet glass, hollow-ware, and fancy goods, this Province took the lead early and has maintained it ever since. From a paltry 6 in 1929, the number of glass factories under the scope of the Factories Act shot up to 49 in 1939, and still higher to 74 in 1942. There is reason to believe that during the past three years also several new factories have been established. A special feature of the industry is that since 1938 it has developed under the guidance of the Glass Technology Section of the Provincial Government. In a number of older factories, inefficient pot furnaces and directly-fired annealing chambers have been replaced by modern tank furnaces and continuous annealing lehrs. Moreover, the Glass Technology Section has materially helped the industry by supplying new formulæ for the proportion of constituent elements in the batch for the manufacture of glass. By adopting the suggestions of this section and

*E. Dixon, op. cit. P. 1.

also by exploiting the results of research work which is being done therein, the factories have been able to put on the market goods of improved quality, design and finish. The newer establishments are invariably equipped with tank furnaces, continuous annealing lehrs, and automatic bottle, jar and finishing machines. The Provincial Government have also helped in the improvement of working conditions, especially in the bangle-joining trade by providing at their own expense five model buildings containing non-draught ventilation arrangements, besides opening a Labour Welfare Centre in Firozabad.

Ad hoc surveys for the purposes of the present enquiry were conducted in Firozabad, Bahjoi and Balawali, three of the five main centres of the industry in the U. P. the other two being Allahabad and Benares. The industry from the standpoint of labour conditions falls broadly into two divisions, viz., (i) cottage shops, wherein the *shishgars* manufacture bangles and others carry on the ancillary processes of joining, cutting, painting, enamelling, etc., and (ii) factories which produce blocks, bangle spirals, hollow-ware and sheet-glass. It would, therefore, be convenient to narrate the conditions of labour in these sections separately.

I.—GLASS FACTORIES.

The reason why glass factories also should tend to converge near the older centre of the industry, viz., Firozabad seems to be the availability of a large number of workers steeped in the methods of glass manufacture. Of course, the fact that the U. P. and the Punjab would provide extensive markets for the manufactured goods must also have had a bearing on the decision of the manufacturers to choose places like Firozabad, Balawali and Bahjoi for the installation of plants.

A.—Employment.

Since the establishment of the first factories about 1918, as the table below will show, the industry had a steady development till 1939, when the number of factories was 49 and the number of employees 4,733. In 1941, the number of factories rose to 79 and the number of employees to 8,038. 1942 figures show some decline but in 1943 the employment went up again.

TABLE 3.

Number of Glass Factories and Workers employed therein (from 1929 onwards).

Year	No. of factories		No. of workers.	
	India	U. P.	India	U. P.
1929	17	6	2,318	1,308
1930	19	6	2,390	1,192
1931	32	16	3,488	1,725
1932	40	22	4,467	2,355
1933	42	24	5,005	2,372
1934	46	28	5,037	2,551
1935	55	35	6,031	3,186
1936	52	30	6,031	3,147
1937	60	34	7,156	3,734
1938	73	47	7,765	4,219
1939	74	49	8,934	4,733
1940	90	60	12,048	5,821
1941	116	79	16,703	8,038
1942	108	74	15,015	7,181
1943	..	..	18,328	7,753

As a result of the impetus given by the war to the industry, it has developed into one of the five or six premier industries of the Province. Besides providing employment to about 8,000 workmen, the factories in this Province have served as the recruiting ground for factories in Bengal, Bombay and the Punjab.

For the purposes of this enquiry, 27 factories in Firozabad, Balawali and Bahjoi were visited and the number of workers covered was 3,146. Of these only 6 factories employed, on an average, over 100 workers daily. Of the 3,146 workers, a considerable number were women and children though the proportion of these two categories would not be as high as it is in the cottage shops. Children are usually employed as moulders and gaugemen ; and women, for sorting cullet and packing the finished goods. About 75 per cent. of the workers are employed on time-rates and the rest on piece-rates. All workers are employed and paid directly by the factories, though the workers are recruited through paid agents. Skilled workers may have to be recruited sometimes from factories in other districts and for this purpose the usual method of sending out agents is adopted. In the case of unskilled workers, however, a *jagariya* is employed by each factory to recruit them as and when necessary. It is also his job to get up early every morning and wake other workers living in the town proper ! Unskilled workers flock to the factory gates also and are recruited directly. Formerly, some of the bigger concerns used to advertise their requirements of technical personnel but the response to their advertisements was so poor that they gave up the practice.

Length of Service.—Statistical information regarding the length of service of operatives could be obtained only from the two leading concerns and is given below.

TABLE 4.

Length of Service of Operatives in the Ganga Glass Works Ltd., Balawali (November 1944).

Length of service in years.	No. of operatives.	Total employment.
0—1	315	43·2
1—5	290	39·8
5—10	49	6·7
Over 10	75	10·3
Total	729	100·0

TABLE 5.

Length of Service of the Operatives in the U. P. Glass Works, Ltd., Bahjoi.

Length of service in years.	No. of operatives.		Total employment.	
	Aug. 1939.	Apr. 1945.	Aug. 1939.	April 1945.
0—1	182	146	32·3	24
1—5	211	281	37·4	46·1
5—10	128	129	22·7	21·2
Over 10	43	53	7·6	8·7
Total	564	609	100·0	100·0

In the Ganga Glass Works, Balawali, only 17 per cent. of the total number of workers had put in over 5 years' service, and over 43 per cent. had worked for less than 12 months in that concern. In the U. P. Glass Works Ltd., Bahjoi, the position seems to have improved inasmuch as the percentage of workers with less than 1 year's continuous service fell from 32.3 in August 1939, to 24 in April 1945. The figures in both the tables point also to the existence of considerable turnover of labour.

It may be noted here that during war time most of the glass factories have been working intermittently due to shortage of coal supplies, and, on an average, it would seem that they work now-a-days only for 6 to 7 months in the year. The workers are not classified as permanent and temporary in any of the Firozabad factories. At Balawali and Bahjoi, however, there does exist such classification, and some extra privileges accrue to the permanent workers, particularly at the latter place. Permanent workers at Balawali are paid higher rates for the same or similar occupations than those paid to temporary ones, and as all employees who have put in 6 months' service in the concern are regarded as permanent, it would seem that some sort of a promotion is obtained by every fresh worker at the end of that period. In the Bahjoi factory, all workers who have put in one year's satisfactory service are, confirmed; and the extra privileges which they become entitled to after confirmation are: (i) two days' extra wages in addition to the wages earned in the course of the month, (ii) a share in the profits of the concern which may give them a sum equivalent to about two months' wages, and (iii) title to 24 days' leave with pay in the year in lieu of (i) above. While there is no definite system of apprenticeship in any of the concerns, the practice is to recruit freshmen as unskilled workers and to give them opportunities to learn the skilled vocations. Those so inclined, avail of the opportunities and learn blowing within three or four years. There is also no system of a graded or time-scale promotion in any of the factories but the better organized among them review the cases of their employees periodically and grant promotions only on grounds of proved skill and efficiency.

Labour Turnover and Absenteeism.—In spite of the fact that glass factories in these centres were established over one quarter of a century ago, they have not been able to build up a stable labour force. Labour in these factories is even now a heterogeneous mixture of diverse elements, some of which are so highly migratory in character that figures for labour turnover often rise to 30 or even 40 per cent. per month. About 10 per cent. of the workers in the factories in Firozabad live in villages 6 to 8 miles away and come every day on bicycles to attend to work. They are primarily agriculturists and in the sowing and harvesting seasons, they just stay away others who, while they live in the town proper as long as there is no work at without, in most cases, giving any notice to their employers. There are home, leave the factories *en masse* when agricultural operations commence. Since the commencement of war, labour turnover has been further accelerated due to a number of factors which have already been stated in Chapter II. It seems that since 1939, the number of glass factories in India has increased by about 45 and at least one-third of these have been established in other Provinces, viz., Bengal, Bombay, and the Punjab. It was found in the course of investigations that a fair proportion of skilled or semi-skilled workers in these factories had been recruited through recruiting agents, from the three western districts of the U. P., viz., Agra, Bijnor and Moradabad. Obviously, therefore, inter-provincial migration is responsible for probably an appreciable

part of the labour turnover. This factor has had its repercussions in the three centres locally also. The defection of workers has forced the factories to try and get workers from the local factories on somewhat higher wages and this has caused a considerable turnover in the factories *inter se*. Moreover, there has been a migration of unskilled workers to the neighbouring areas for employment in military works, and also due to an uncertain and irregular supply of coal most of the factories have had intermittently to stop working. The average number of days for which they have been able to work in the course of the year has been in the neighbourhood of 200 during 1944. Some of the employers now doubt the desirability and necessity of training up persons who would not stick to their jobs later. The following table shows the extent of labour turnover in one of the Firozabad factories investigated. No figures are available for others.

TABLE 6.

Labour Turnover in a Firozabad Factory.

Month.	Average Daily employment.	No. of workers who left the concern.	Per cent.
January	66	10	15.15
February	89	41	46.06
March	67	5	7.46
April	The factory did not work.	All workers dismissed.	100.00
May	141	76	53.90
June	92	49	53.26
July	23	8	34.78
August	42	1	2.38
September	75	12	16.00
October	31	1	2.22
November	93	22	23.68
December	76	Nil	Nil

As for absenteeism, it appears that the figures are fairly high, ranging between 10 and 15 per cent. in most concerns. Glass factory labour is given to drink and after pay day, workers paint the town red and make merry for a day or two. Other contributory causes of absenteeism are sickness (mostly malaria which sometimes takes the form of an epidemic) and social functions.

Standing Orders.—Not even in the bigger concerns employing over 500 workers are there any “standing orders” and the relations between the employers and the employees are governed by tradition and verbal instructions. Nor is there a labour officer in any of the three centres. Generally the management looks to the grievances of the workers; but if the trouble becomes acute, the intervention of Provincial Labour Officers is sought, whose arbitral award both the parties accept.

Involuntary Unemployment.—As has been already stated, due to an irregular supply of coal and raw materials, most of the factories have to stop work off and on. In one of the biggest centres of the industry, viz., Firozabad, the problem was so acute that a large number of factories were using wood fuel. Apart from the danger to agriculture from deforestation, the costs are also increased. The result is that only a few factories have been

able to work throughout the year. The average number of days worked by glass factories in the country would be between 150 and 180. This intermittent stoppage of work has serious repercussions on employment and average earnings of workers, particularly in places where alternative employment of any kind is not readily available. If, for instance, the Ganga Glass Works Ltd., at Balawali stops work for a week, all its 729 workers would have to sit idle and the wages which they get leave no surplus to enable the workers to provide for the rainy day.

B.—Wages and Earnings.

Factory workers in the Firozabad centre have organized a union—the Mazdoor Sabha, and in July 1939, the Union forced the employers to agree to certain minimum rates of wages to be paid to the enumerated categories of workers. The rates were subsequently revised in November 1943, and enforced with effect from the 1st of December 1943. The following table gives the rates of wages as fixed on the two occasions and shows also the percentage increase.

TABLE 7.

Rates of Wages as per Agreement between Mazdoor Sabha and Employers at Firozabad.

Occupation	1-8-1939.	1-12-1943.	% increase.
Tarwala	4 8 0 (Ordy. bangles)	80	
	2 8 0	5 8 0 (Reshmi ..)	120
Belanwala	1 2 0	1 12 0 (Ordy. bangles)	55.5
		2 12 0 (Reshmi ..)	144.4
Muthewala	1 0 0	2 6 0	137.5
Lom maker	0 15 0	2 4 0	140
Lom carrier	0 7 6	1 6 0	193.3
Gulliwala	1 0 0	2 6 0	137.5
Kataiwala	0 15 0	2 4 0	140
Ginaiya	0 8 6	1 8 0	182.3
Astarwala	0 15 0	2 3 0	133.3
Pahalwala	0 15 0	2 4 0	140
Bubblowala	0 8 6	1 8 0	182.3
Blower	1 6 0	3 0 0	118.2
Women	0 5 0	0 14 0	180

In 1939, the average rates of wages paid were at par with the Mazdoor Sabha rates or even a little higher. The problem of labour shortage did not exist then and the employers were able to get the required number of

workers at the minimum rates. The following table shows the position in 1939 with regard to wages :

TABLE 8.

Average Rates of Wages in Glass Bangle Factories, Ferozabad, 1939.

Occupation.								Mazdoor Sabha Rates.	Average Rate Paid.
Tarwala .. .. .	..	..	..	..	..	..	..	2 8 0	2 8 0
Belanwala .. .. .	..	..	..	..	..	..	..	1 2 0	1 2 0
Muthewala .. .. .	..	..	..	..	..	..	..	1 0 0	1 2 0
Lom maker .. .. .	..	..	..	..	..	..	..	0 15 0	1 2 0
Gulliwala .. .. .	..	..	..	..	..	..	..	1 0 0	1 4 0
Kataiwala .. .. .	..	..	..	..	..	..	..	0 15 0	1 0 0
Bubblewala .. .. .	..	..	..	..	..	..	..	0 8 6	0 9 0
Bubblemaker .. .. .	..	..	..	..	..	..	..	0 12 0	0 12 0
Bubblecooler .. .. .	..	..	..	..	..	..	..	0 7 6	0 8 0
Lom carrier .. .. .	..	..	..	..	..	..	..	0 7 6	0 8 0
Ginaiya .. .. .	..	..	..	..	..	..	..	0 8 6	0 9 0
Astarwala .. .. .	..	..	..	..	..	..	..	0 15 0	0 15 0
Pahalwala .. .. .	..	..	..	..	..	..	..	0 15 0	0 15 0
Women .. .. .	..	..	..	..	..	..	..	0 5 0	0 5 0

Shortage of labour was felt first about the middle of 1941 and since then the problem has assumed immensely increased proportions. The result was that wages increased considerably. In 1943, the Mazdoor Sabha forced a revision. It was found in the course of our survey that the wages paid now are appreciably above those demanded by the Sabha. The following table illustrates the position.

TABLE 9.

Average Rates of *es in Glass Bangle and Hollow-ware Factories, Ferozabad, 1945.*

Occupation	Mazdoor Sabha Rates.	Average Rates Paid.							
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit
		1	2	3	4	5	6	7	8
Tarawala	Rs. A. P. Ordinary 4 8 0	Rs. A. P. 6 0 0	Rs. A. P. 6 0 0	Rs. A. P. 5 8 0	Rs. A. P. 7 0 0	Rs. A. P. 7 0 0	Rs. A. P. 6 0 0	Rs. A. P. 7 0 0	Rs. A. P. 7 0 0
	Reshmi 5 8 0	9 8 0	9 0 0	9 0 0	9 0 0	10 0 0	9 0 0	9 8 0	9 8 0
Belanwala	Ordinary 1 12 0	2 0 0	2 8 0	2 8 0	2 8 0	2 10 0	2 8 0	2 4 0	2 8 0
	Reshmi 2 12 0	3 0 0	3 0 0	3 4 0	3 4 0	3 12 0	3 8 0	3 12 0	3 8 0
Muthewala	2 6 0	3 0 0	2 8 0	2 6 0	2 9 0	2 14 0	2 8 0	3 8 0	4 8 0
Gulliwala	2 6 0	3 0 0	2 6 0	2 6 0	2 8 0	3 0 0	2 6 0	3 4 0	3 8 0
Kataiwala	2 4 0	2 4 0	2 4 0	..	..	2 8 0	2 4 0	2 10 0	2 12 0
Ginaiya	1 8 0	1 10 0	1 8 0	..	..	1 10 0	1 8 0	1 10 0	1 10 0
Low maker	2 4 0	3 0 0	..	..	2 6 0	2 8 0	2 4 0	2 12 0	2 8 0
Lom Carrier	1 6 0	..	1 6 0	1 6 0	1 7 0	1 8 0	1 6 0	1 6 0	1 8 0
Astarwala	2 3 0	..	2 4 0	2 3 0	..	..	..	..	2 8 0
Pahalwala	2 4 0	..	2 4 0	2 4 0	2 6 0	..	2 4 0	..	2 8 0
Bubblewala	1 8 0	..	1 8 0	2 0 0	1 9 0	..	1 10 0	1 12 0	1 12 0
Women	0 14 0	1 0 0	1 14 0	..	1 0 0	0 14 0	1 0 0	1 0 0	1 1 0

In the factories manufacturing blownware, the basic wages seem to have gone up by about 50 per cent., where an additional dearness allowance is paid, and by 100 to 200 per cent. where only consolidated wages are paid. In a leading blownware factory, the average basic wages were found to have gone up by about 40 per cent. since 1939. Thus the average basic wages of blowers in pre-war days were Rs. 33 per month. In 1945, the corresponding figure was Rs. 45-11-6, showing an increase of 38.5 per cent. The highest percentage increase was found in the wages of the carpenter. In 1939 his average basic wages were Rs. 13 per month but in 1939 they had gone up to Rs. 29 per month, the increase being 123 per cent. The wages of helpers show the least percentage increase—30.7 per cent. The increase in gross earnings during the same period ranges from 79.6 per cent. (in the case of grinders, cutters, packers and wrappers) to 238.4 per cent. (in the case of carpenters). Details in this regard are given in Appendix I. But the following table summarises the position.

TABLE 10.
Average Basic Wages in a Leading Glass Factory.

Occupation.	1939			1945			Increase %
	Average Basic Wages.			Average Basic Wages.			
	Rs.	A.	P.	Rs.	A.	P.	
Blowers	33	0	0	45	11	6	38.5
Helpers	22	0	0	28	12	0	30.7
Bubble-makers	13	6	9	17	12	4	32.4
Carries and Moulders	8	10	0	13	12	3	59.5
Mixers	12	5	4	16	4	0	31.7
Firemen	18	4	7	27	2	0	48.3
Lehr Unloaders	11	8	0	15	11	8	36.7
Coalmen	9	8	0	14	12	0	55.2
Cutters, Grinders, Packers, Wrappers	9	14	5	14	5	0	44.9
Carpenters	13	0	0	29	0	0	123
Potters	24	4	0	40	0	0	641.9

In Appendices II and III are given the wages and earnings of workers in a Sheet Glass Factory paid in 1939, 1942, and 1945. Wages in 1942 show only a slight increase over those in 1939 and in a few cases they indicate a fall. This latter is explained by the fact that a large number of new workers were recruited during 1941, and, therefore, the lower rates paid them brought down the average wage level. By 1945, however, the wage level had gone up 100 to 250 per cent. as compared to the 1939 level.

Sheet cutters are employed on piece rates. The following table gives the rates paid in 1939, 1942, and 1945.

TABLE 11.
Piece Rates for Sheet Cutters.

Date	Area of the Piece.	Thickness of the sheet	Rate			D.A.
			Rs.	A.	P.	
August 1939	100 sq. ft.	1/16 inch	0	2	3	Nil
		3/32 ..	0	2	6	Nil
August 1942	Do.	1/16 ..	0	2	3	25% of the wages.
		3/32 ..	0	2	6	
April 1945	Do.	1/16 ..	0	5	0	Nil
		3/32 ..	0	5	3	Nil

The following table gives an idea of the increase in the average basic wages paid to the important categories of workers.

TABLE 12.

Average basic wages paid in a Sheet Glass Factory.

Occupation.	Average Basic Wages		Increase %
	1939	1945	
<i>Sheet Glass Section—</i>			
Mixers	0 4 7	0 10 1	120
Firemen	0 5 7	0 14 0	154.5
Helpers	0 4 10	0 11 7½	140.5
Bottom Machinists	0 5 10	0 11 6	97.1
Top Machinists	0 6 9	0 11 5	73.4
Sheet Cutters	1 1 7	2 3 10½	104
Sheet Carriers	0 4 3½	0 9 8½	126.2
Carpenters	0 9 8	2 12 5	359
Packers	0 6 0	0 11 7	93
Wrappers	0 3 3	0 8 2	151
Porters	0 5 1½	0 11 1½	117
<i>Boiler—</i>			
Firemen	0 6 0	0 11 9	95.8
Cleaners	0 4 0	0 8 3	106.2
<i>Blacksmithy—</i>			
Blacksmith	30 0 0	102 0 0	240
Hammerman	0 6 0	0 8 9	45.8
<i>Workshop—</i>			
Turners	42 0 0	1 12 0 p.d.	25.8
Fitters	30 0 0	1 4 0	25
Electrician	50 0 0	4 5 3 p.d.	160

Dearness Allowance and Bonus.—Only in the two big factories surveyed is dearness allowance paid. In the Ganga Glass Works, Ltd., Balawali, a dearness allowance of Rs. 12 p.m. to those getting Rs. 16 or less, and Rs. 10 p.m. to those getting more than Rs. 16 was paid till the end of 1944. In 1944 the Dearness Allowance was revised, and a flat rate of Rs. 15 p.m. was sanctioned for all the workers getting below Rs. 100 p.m. Bonus equivalent to one month's salary is also given to all permanent workers twice a year. The U. P. Glass Works granted a dearness allowance to their employees on the 1st January 1942, at 3 annas in the rupee. This, as the following figures will show, has since been gradually increased to 10 annas in the rupee.

	D.A.	
1st January 1942	0 3 0	in the Rev
1st August 1942	0 4 0	"
1st January 1943	0 6 0	"
1st March 1943	0 8 0	"
1st May 1943	0 10 0	"

In addition to the Dearness Allowance, the concern initiated a fortnightly bonus scheme on the 1st of January 1942. After 14 days of work, a worker was given title to one day's extra wages. On the 1st March 1945, to ensure better attendance a daily attendance bonus was also sanctioned. For each day's attendance, the worker was paid an anna extra.

Miscellaneous.—The smaller glass factories make no payment for overtime work as a rule, for generally they do not adhere strictly to the declared hours of work. In the bigger establishments overtime is paid for at the rates prescribed in the Factories Act. Fines are imposed only in one concern where a small fines fund has accumulated. The proceeds are used for providing medicines to workers. In a large number of cases fines are refunded if the worker shows improved work and behaviour. The wage period in most of the concerns is one month, wages being paid on the 7th of the month following. In some factories it may be a fortnight, payments being made on the 3rd and 18th of the month. Holidays with pay are granted in only three concerns and there too the piece-rate workers have to be content with an unpaid one. Only in one concern is the paid holiday given every week. In others, it is given once every fortnight. It may be noted, however, that it is almost impossible to find out from the records whether a worker did get a holiday after 14 days' work or not. It was alleged that as in almost all the concerns these holidays were not paid for, the worker was tempted to work on the "holiday" under an assumed name.

C.—Working Conditions.

Hours of Work.—It was found that due to shortage of coal an overwhelmingly large number of factories were burning wood. The result, therefore, is that only a few of them are now working two shifts and others only one shift a day. In winter, the shift hours are 9 A.M. to 5 P.M., and 5 P.M. to 1 A.M. In summer the timings are changed, as days are very hot and it would not be possible to work in a temperature of 120°. Shifts in the summer months, therefore, are (i) from 3 A.M. to 11 A.M., and (ii) 7 P.M., to 3 A.M. without any rest interval. Hours of work for those who do not have to work in the blowing shed are from 9 A.M. to 7 P.M., with an hour's rest between 1 and 2 P.M. Firemen work on 8 hour shifts. There are three shifts for firemen, in all the factories. Some of the glass bangle cutting factories work only in the day throughout the year. Working hours in such factories are 8 A.M. to 7 P.M. with a two-hour rest interval from 12 noon to 2 P.M. Others work for one fortnight in the day (7.30 A.M. to 5.30 P.M. with an hour's rest interval) and at night in the next (9 A.M. to 5 A.M.). No overlapping shifts are worked in any of the concerns.

Ventilation, lighting, etc.—As the blowing sheds are open on all sides, they are well ventilated and lighted. Mixing rooms in almost all factories are very poorly ventilated and are full of silica dust all the time. In the Ganga Glass Works, Balawali, fresh air is blown into the shed from one side and the hot air allowed to escape from the other. Most of the glass factories are lighted electrically. The blowing shed in all the factories appeared to be congested. Arrangements for drinking water were found to be adequate in the bigger establishments, but in the smaller ones drinking water was stored in dirty earthen pitchers. In the Ganga Glass Works, Balawali and the U.P. Glass Works, Bahjoi, water is pumped into an overhead reservoir by an electric motor and then distributed through pipes. It was stated that the well and the reservoir were disinfected occasionally. Latrines and Urinals, where provided, are not kept clean. It was stated everywhere that workers preferred to go out into the open. All the glass factories have one or two big tank or pot furnaces and annealing chambers. Blowing sheds are parti-

cularly hot and in summer months conditions are awful. When the atmospheric temperature is 115° or so outside, it is in the neighbourhood of 125° inside the factories. In spite of this, there is no protection against heat. In the sheet glass factory at Bahjoi, besides a very big tank furnace there are half-a-dozen burners, and it would be no exaggeration to say that if one were to stand even for half an hour near them, one would faint. Cases are not uncommon when workers do actually faint while working at the bottom machine. It is really deplorable that no shelters have been built in glass factories except in one. As has been said earlier, such shelters are particularly necessary in these factories. In only one factory, viz., the Ganga Glass Works, Ltd., Balawali, has a shelter been built. This shelter, however, is easily one of the best seen in the course of our investigations. It consists of a big hall 82 ft. × 58 ft. with a verandah on two sides. The roof is pretty high. It is kept clean and is white-washed twice a year.

D.—Welfare Activities.

Apart from the obligatory welfare activities, there are no such activities worth the name in any of the concerns, and actually attempts, are made to circumvent even the provisions of the Factories Act. For example, in one factory a line of urinals and latrines had been built in the far corner of the compound but access to them was barred by heaps of iron scrap and bricks! Sanitary arrangements in all the glass bangle factories in Firozabad are conspicuous by their absence. In the workmen's rented quarters there are no washing and bathing facilities, and men and women and children all flock to the nearest tap. Children are seen easing themselves in the drains. The localities in which workers live stink awfully. Inside the factories, too, conditions are deplorable. The small factories usually ignore the provisions of the Factories Act, and urinals and latrines provided in the bigger ones are invariably dirty. In the three biggest factories surveyed, viz., the Ganga Glass Works at Balawali, the U.P. Glass Works at Bahjoi, and Jain Glass Works at Harangau, sanitary arrangements are somewhat better. There are a fairly large number of taps provided in each of these concerns and workers are allowed to wash and bathe under them. No special arrangements are made anywhere for the supply of cool water and tap water or water stored in earthen pitchers is considered enough, although this is just the sort of industry in which such arrangements would be gratefully accepted by workers.

As for medical facilities, the less said the better. The smaller establishments do not have proper equipment for even rendering first aid. In Firozabad no concern has a dispensary. In the U. P. Glass Works, Ltd., Bahjoi, one homeopath has been employed. In a factory where most of the cases are of cuts and burns one fails to see the utility of this system of treatment. In the Jain Glass Works at Harangau and the Ganga Glass Works at Balawali, there are allopathic dispensaries and on an average 50 cases, mostly of malaria, cuts and burns are treated every day in each. These dispensaries are in the charge of qualified compounders and a doctor makes only weekly visits! It was claimed by all the concerns that workers suffered from no occupational disease. The representatives of workers, however, alleged that cases of silicosis had been detected and that cases of bronchitis, myopia and other lung and eye diseases were common. In the absence of a periodical medical examination of workers, the incidence of occupational diseases could not be gauged properly. It is however, not open to doubt that most of the blowers suffer from chronic bronchitis and asthma, and that in all probability a number of mixers have contracted silicosis.

No canteens or creches have been provided in any of the concerns though the Ganga Glass Works at Balawali have rented out 4 rooms within their premises to shopkeepers. There are two grain shops, one shoe-maker's shop and a tailor's shop. These are private shops and the profits that accrue go to the shopkeepers. Commodities are sold at controlled rates. Workers have both cash and credit transactions. The U. P. Glass Works, Ltd., at Bahjoi occasionally supply free *dal* to workers. The Ganga Glass Works at Balawali maintains an upper primary school for the benefit of the children of the workers though admission of others is not barred. In Firozabad no concern has made any arrangements for the education either for adult workers or their children. Reference may be made here to the activities of the U. P. Government Welfare Centre at Firozabad which organises evening sports and night classes. There is a small library also. It was, however, found that workers discontinued reading after acquiring a smattering of reading and writing and soon relapsed into illiteracy.

E.—Housing.

Housing accommodation is provided by the U. P. Glass Works, Ltd., Bahjoi. Out of a total strength of 613 workers, however, only 84 workers and their families are housed in the factory quarters. Some of the quarters are allotted to the clerical and superior staff. In this way the proportion of workers housed in factory quarters is only 7 per cent. of the total. The rentals charged vary from two annas to eight annas per mensem for the quarters meant specifically for ordinary coolies. The rentals of more spacious quarters which are allotted to the members of the superior staff, such as Engineers, Chemists, etc., vary from Rs. 1-8-0 to Rs. 2-0-0. Some of them live in workers' quarters also. Generally speaking, the rentals are charged at the rate of 4 annas for each room. Thus, a quarter, having three rooms 18 ft. \times 12 ft. \times 15 ft., one store-room, one kitchen room, a courtyard and a verandah in the lower storey and a room 8 ft. \times 8 ft. \times 10 ft. in the upper one is charged at Rs. 1-8-0 per month. The quarters of Rs. 2 per month have two rooms 12 ft. \times 12 ft. \times 20 ft. and two 8 ft. \times 8 ft. \times 10 ft. The cheapest quarter, i.e., the 4 anna type has one room 10 ft. \times 10 ft. \times 12 ft. and a courtyard 6 ft. \times 10 ft. The quarters are *pucca* with brick-laid roofs and flooring. The quarters charged at less than as. 8 per mensem have no separate water tap or latrine. In the better quarters, latrines and water taps are provided. There is no congestion in the superior quarters, but 4 anna and 8 anna quarters house on an average a family consisting of 4 to 5 persons. There is no sub-letting in any of the factory quarters. Sanitation is poor and water supply meagre or practically non-existent in the cheaper quarters. There is only one water tap for 15 or 20 quarters of one particular type. There is a narrow drain outside these quarters, which remains usually dirty. The condition of sanitation and water supply is slightly better in the quarters charged at 8 annas or above per month. They have a separate latrine and hand pump each attached to them and are also neater and cleaner.

In the Ganga Glass Works, Ltd., at Balawali, housing facilities have been provided to 250 workers—about 1/3rd of the total labour force. Here no rents are charged by the employers for the housing accommodation provided. The table below will give details of housing provided by the employer as regards types of houses, showing habitable and subsidiary rooms, types of walls, ventilation, roofing, flooring and water supply.

TABLE 13.

Housing Accommodation for Workers in the Balawali Glass Works Limited.

Type	Total No. of type.	No. of rooms in each house.	Dimensions L×B×H	Courtyard	Verandah	Latrine (type)	Bath	Others	Walls (type)	Ventilation (details)	Roofing (type)	Flooring (type)	Water-supply
I	30	2	10'×12'×10'	25'×10'	25'×7'	Separate	Separate	1 store-room & 1 kitchen.	Pucca	Windows 2'×2½'×2 ventilators	23 with tiled roof 7 with tinned roof.	23 pucca 7 kacha	23 separate, 7 common.
II	13	2	Do.	Do.	No	Do.	No	No	Kacha	1 window	6 with tin & 7 with tile	kacha	Common.
III	52	1	Do.	1 long Courtyard common to 52 qrs.	No	Open	No	No	Do.	Do.	39 with tin & 13 with tiled roof.	Do.	Do.
IV	11	1	Do.	Open	Verandah 25'×7' for 2 Qrs.	No	No	No	Do.	Do.	Tin roof	4 pucca all others kacha	Do.
V	27	1	Do.	Open	No	No	No	No	Do	Do.	Tiled	Kacha	Do.
VI	48	1	Do.	Open	1 verandah 25'×7' for 2 Qrs.	No	No	No	Pucca	1 window & 2 Ventilators	..	Pucca	Do.
VII	14	1	Do.	Open	25'×7'	No	No	No	Do.	Do.	..	Pucca	Do.
VIII	14	1	Do.	Open	No	No	No	No	Do.	One window	Tiled	Pucca	Do.

Total number of quarters = 209

Total number of workers (with or without families) housed = 250

These are the common Indian types of houses. There is no congestion. Most of the workers live in single-room tenements and do not usually bring their families to the town. No sub-letting is permissible. With reference to sanitation and water supply, it was found that **water taps and open latrines had been provided.** About 2/3rds of the workers who are recruited from the surrounding villages maintain their contact with the fields and go back to their own homes after their day's work in the factory.

In the Firozabad centre, one of the 10 cutting factories visited provided housing for its workers. Details of housing provided in some others are given below.

TABLE 14
Housing Accommodation.

Factory	Whether housing provided.	Detailed remarks.
1	Yes ..	Dirty and scanty accommodation. There were two rooms (10' × 4½' × 6') and (12' × 8' × 10') and an open place (15' × 6') where the employers said they housed their workers. Thus, in one big hall 10 to 12 men were supposed to live.
2	Yes ..	Four rooms (10' × 8' × 8') and 4 rooms (8' × 6' × 8') meant to house 8 workers. The rooms were rather congested and it was dark even during the day.
3	Yes ..	6 rooms (10' × 8' × 10') for which rental is charged at Rs. 2 per room per mensem. The <i>bhisti</i> (water carrier) and the firemen are exempted from payment of rentals. In these six rooms, 9 workers were found living—3 each in 2 rooms and 1 each in the other 3 rooms. One room was occupied.
4	Yes, but only 3 workers.	Three quarters (8' × 10' × 10') rented by the employer on Rs. 6 per month and supplied free of charge to workers. There are two windows, brick-laid floor, one verandah (7' × 18' × 10'), and a separate courtyard in each of these.
5	Not to all workers, but only to firemen and helpers.	There are 10 rooms (12' × 10' × 8') with <i>pucca</i> walls and <i>pucca</i> floor in some rooms and <i>kacha</i> in others and a well within the premises. There is good arrangement for washing and bathing. No rents are charged from the labourers for these quarters. The employees supply wood, fuel and light free of cost. Generally speaking from two to three men live in a quarter on an average. Thus in the 10 quarters about 25 to 30 labourers are housed.

The Jain Glass Works at Harangau has provided 22 quarters to their employees. These quarters have one room (10 ft. × 10 ft. × 10 ft.) a courtyard (12 ft. × 10 ft.) outside the room, and at the right extreme corner, of the courtyard a small walled enclosure 3 ft. square to serve the purpose of a urinal or latrine. They are all single-room tenements. Only 4 workers were living in these quarters. Each worker had 2 or 3 rooms at his disposal. The remaining quarters were unoccupied. Workers recruited from the villages nearby preferred to go back to their homes.

F.—Trade Unions.

Firozabad labour has formed a Trade Union called the Mazdoor Sabha. The strength of the Sabha is about 2,000. Every member is obliged to subscribe one day's wages annually to the Sabha Fund. The Union has made considerable efforts to keep the wage level tacked on to the cost of living index. It was as early as 1939 that the Sabha organised a strike and succeeded in forcing up the wage level. An agreement between the workers and the employers provided for the payment of minimum rates for each enumerated occupation. The agreement had a rather limited coverage, as **cottage workers were completely** left out of its purview. The employers collectively or individually made no efforts to evade the agreement. The new wage rates were enforced from the 1st August, 1939 and soon thereafter the war broke out. A large number of skilled workers left Firozabad for other centres of the industry, and shortage of labour caused a

small rise in wages. In 1942, wages rose further but lagged considerably behind the rising cost of living. In 1943, the Mazdoor Sabha rates were raised. Details in this regard have been given earlier. In addition to the Mazdoor Sabha, there are two Coral Pipe Cutters' Associations. Recently one of the Coral Pipe Cutters' Associations organised a strike and obtained an increase in the piece rates for cutting. The Mazdoor Sabha helps its members in procuring food grains and other basic commodities.

G.—Indebtedness.

Firozabad workers are all indebted, of course, and to varying extents. Given to vices like gambling and drinking, they have often either to ask their employers for advances or to borrow from moneylenders. In the former case they do not have to pay interest, but in the latter interest is charged and the rates, usually, are in the neighbourhood of 50 per cent. In some cases, they may be as high as 300 per cent. Although factory owners charge no interest directly, they are able to get overtime and domestic work out of the workers without making any payments. The indebted worker feels so obliged to his employer that he gladly works extra for nothing. Most of the workers are indebted for petty sums though some of them owe Rs. 400 and more. The moneylenders compound interest half yearly by adding the unpaid interest to the capital. In a small town like Firozabad there are two cinema houses which are always packed to capacity. It was stated that the proprietary of these cinema houses were themselves lending money to workers! Other causes of indebtedness are sickness, domestic needs and litigation. Most of the workers have patches of land also and before the passage of the U. P. Tenancy Act, cases of litigation were frequent. Now, however, conditions have improved, but only in this regard. Other evils continue unabated, and liquor shops, cinema houses and roulettes do brisk business.

H.—The Existing Legislation and its enforcement.

The number of glass factories under the scope of the Factories Act was 68 in 1942, and 75 in 1943. The Government of the Province under Notification No. 1389|XVIII-516-38, dated the 22nd May 1940, declared *inter alia* glass bangle factories employing 10 or more workers and using power, to be "factories" for purposes of the Factories Act with the exception of Sections 15, 16, 33 (1) and 33 (2). The Act is not made applicable to the cottage workshops, although such a step would have been extremely desirable, and also feasible in view of Section 5 of the Act. As will be shown later in a separate section on cottage shops, working conditions in them are most deplorable. Children of tender age work for long hours in the most filthy atmosphere imaginable. Even the Employment of Children Act is not applicable to these shops.

The Factories Act itself does not apply in its entirety to the glass factories for under Section 43 (d) they have been exempted from the Provisions of the Sections 34 (weekly hours), 35 (weekly holidays), 36 (daily hours) 37 intervals for rest), and 38 (spreadover), or any of them. Almost all of them have been exempted from the operation of Section 36 of the Factories Act. The condition attached to such grant is that a worker must be given 24 hours holiday after not more than 14 days' continuous work. It was found in the course of our survey that this attached condition was being ignored in many cases. It was also found that the special provisions for adolescents and children contained in Chapter V of the Factories Act were being observed entirely in the breach. Section 50 prohibits the employment of children below 12 years of age, but even in the regulated factories children of 8 to 10 years were seen working. Under Section 51, the employment of children between 12 and 15 years of age as "children" and of adolescents between 15 and 17 years as "adults" is allowed only if a certificate of fitness had been obtained from

a qualified doctor in respect of such persons. In none of the concerns were any young workers in possession of such certificates. The classification of adolescents as adults or children is very important in view of the restrictions placed on the hours of work for children. Section 53 (2) of the Act states : "An adolescent who has not been granted a certificate of fitness to work in a factory as an adult under sub-section (2) of Section 52, shall, notwithstanding his age, be deemed to be a child for the purposes of this Act". Section 54 of the Act limits children's hours of work to 5 and spreadover to 7½. This is easily one of the most commonly disregarded provisions of the Act. It is specially provided in sub-section (4) of Section 54 that the provisions of Section 35 of the Act shall apply to child workers also but that *no exemption from the provisions of that Section may be granted in respect of any child*. This specific direction is particularly important in this context as proprietors of glass factories seem to be completely oblivious of the fact that exemption granted from Section 35 of the Factories Act is in respect *only* of the adults. Among other provisions of the Act frequently disregarded are those in respect of cleanliness, ventilation, cooling, overcrowding, water supply latrines and urinals. The U. P. Government under Rule 23 of the Rules made under the Factories Act, require all regulated establishments to maintain proper first-aid equipment and also to employ a certified first aider. This rule also is not being observed in most of the factories.

As for the enforcement of the Workmen's Compensation Act, the less said the better. The provision in Section 3 (a) of the Act for a waiting period of one week hits the glass factory worker hardest. Most of the accidents caused are not sufficiently serious to disable a worker for more than a week. A cut in the hand or a burn in the arm gets cured within 5 or 6 days in most cases. The incidence of such cuts and burns is large in all the factories with the result that no injured workers get anything for the periods of disability which recur frequently. Even in the more serious cases wherein the worker becomes entitled to compensation under the Act every attempt is made to square up matters as soon as possible. The workers' preference for ready money makes such a deal possible and easy.

II.—FIROZABAD COTTAGE SHOPS.

The bangle industry of Firozabad is decentralised and except for the manufacture of glass spirals and coral pipes all further processes are carried on in cottage shops employing 5 to 35 persons each, though using no power. It may be better to trace the course of glass spirals and coral pipes as they go through the various processes and are finally placed on the market for sale. It is not necessary to re-state here the method of manufacturing glass spirals. The spirals are cut in the glass bangle factory itself but the open ends of the rings are joined in what are known as joining shops. Joined bangles are taken to another set of shops which have specialised only in cutting the edges by grinding the bangles on rotating wheels. The next step is to get the bangles painted and enamelled. Mostly this is done in the selling shops themselves where children of 6 to 8 years are employed along with a few adults on piece rates. The unit is one *toda* which contains 288 bangles and the rates depend upon the pattern to be painted. The coral pipes also take the same route except for a brief loop. They are sent to the glass bangle cutting factories and shops. Almost every shop has its own way of cutting the bangles, and the method is kept a closely guarded secret. While some follow the scratching method, using bunsen burners to soften the scratched parts, others have invented special types of saw wheels which cut the pipe into bangles straightway. The other processes are the same as those in the case of glass

rings. Among the final processes besides painting and enamelling is the setting of the facets.

A.—Employment.

It is estimated that the bangle industry of Firozabad provides employment to about 10,000 workers out of which at least 6,000 work in the cottage shops. No accurate figures can be given in this regard because no records of any kind are maintained as far as the cottage shops are concerned. A very large proportion of these workers are children—50 per cent. would be a somewhat conservative estimate. Among the workers employed in the *shishgars* are *varawals*, *kadiyas*, *juraiyas*, *ganaiyas* and *jhukariyas*. The function of the *jhukariya* is to stoke the furnace. In Chapter II the functions of some of others have been described already. In the glass bangle cutting shops, the only type of workers employed are known as 'cutters'. Most of them are salaried workers. In the joining shops, *panknewals*, *sadhariyas* and *juraiyas* are employed. *Panknewals* work the bellows, *sadhariyas* heat the rings and put the two ends together by giving a slight twist, and the *juraiyas* fuse the two ends together with the help of a small blow pipe and burner. A very large proportion of workers employed as *kadiyas*, *sadhariyas*, *juraiyas* and *ganaiyas* are small children. Women are employed only for washing the bangles but often this also is done by children. The employment of children in these shops, it may be pointed out, is not illegal. They are covered by no law whatever, not even the Employment of Children Act. The justification of the employment of children of tender ages is sought in the usual "apprenticeship" argument. The children, it is claimed, must start early to be skilful later on in the better vocations. The plausibility of the argument is more apparent than real for the child who starts at 5 or 6 may not live even up to the middle age! The scale on which children are employed in this industry is as a parallel only in the mica manufacturing and bidi making industries but it is much more objectionable here than in the other two. The cheerful faces of children employed in the mica factories redeem the situation immensely. The position is entirely different in the case of the glass industry where children look emaciated, anaemic, myopic and gloomy. One cannot expect things to be otherwise when children work for long hours in the most deplorable conditions.

In the absence of records, the extent of turnover and absenteeism among the workers in the shops could not be found out. The shop-keepers and *jurawals*, however, did not complain of turnover. As there is considerable personal contact between the employer and the employee in these small establishments, the evil is discouraged. Absenteeism was reported to be rampant among the workers mostly due to drink but often due to sickness also. And while nothing definite can be said about the length of service of operatives, it was found that a large number of adults questioned on the point had put in over 5 years of service. There is, of course, no security of tenure but workers are dismissed more often on grounds of personal petty feuds than of laxity in work. As for the mode of recruitment, smaller establishments prefer to employ, as far as possible, their own relations. This is more true of the *shishgars* and of the cutting shops. For the skilled occupations, workers are personally approached either by the cottager himself or by his agent.

B.—Wages and Earnings.

The wage level here, relatively speaking, cannot be regarded as low. Children are earning from annas 12 to Rs. 1-8 0 per day, while the skilled adult workers from Rs. 3 to Rs. 10 per day. Since 1939 the general wage level has gone up by about 200 per cent. The employees of *shishgars* are usually time-rate workers except the *juraiya* who works on piece rate. The following

table gives recent changes in the average daily earnings of workers employed in *bhattas* :—

TABLE 15.

Average daily earnings of workers employed in bhattas.

Occupation.	Daily Earnings.		Increase %
	1939	1945	
	Rs. A. P.	Rs. A. P.	
Tarwala	2 8 0	9 0 0	300
Belaiya	1 2 0	3 0 0	166.7
Kataiya	0 8 0	1 6 0	175
Ginaiya	0 7 0	1 2 0	157
Juraiya	0 8 0	1 8 0	200
Jhukaiya	0 6 0	1 2 0	200

In the coral-pipe cutting shops or *addas*, workers are employed on monthly salaries but the salaries are directly related to the output of the workers. Usually a cutter is paid Rs. 10 p.m. for every dozen pipes cut per day. Thus if a worker cuts 4 dozen pipes per day, his monthly salary would be fixed at Rs. 40 p.m. It is, of course, not necessary for the worker to do 4 dozen pipes every day. He has to maintain the average over the period of one month. *Jurai* work is done on contract basis. The *Juraiwala* gets the bangles from the factory owners on contract and gets the work done in his shops. The rate for *jurai* work, at present, lies between Rs. 22 and Rs. 27 per 100 *todas*. If, however, kerosene oil is supplied by the factory a deduction for the cost of kerosene oil tins is made. The controlled rate of one tin of oil is Rs. 5-6-0, but it was alleged by some *juraiwalas* that they had often to pay Rs. 6-8-0 per tin. As the blackmarket rates were considerably higher, they felt obliged to the factory owners for charging only a small premium. The *juraiwala* in his turn employs *pankhewalas* on Re. 1 or 1-4-0 per day and *sadhaiyas* and *juraiyas* on piece rates. The average daily earnings of the latter two categories of workers are Rs. 1-4-0 and 1-8-0 per day respectively. A large number of the *juraiyas* are children earning Rs. 1-8-0 per day, but where adults are employed they are able to earn more as their production is higher. In the painting and enamelling, shops also, a large number of children are employed. They are paid the same rates as are paid to adults for the same work but the average daily earnings of children are about as. 12 per day, while those of the adults are about Rs. 2 per day. It may, however, be pointed out here that for painting there are no standard rates. The skill of the individual workers determines his wages, as is gauged by his capacity to put fresh designs on the market which are generally acceptable.

While no deductions are made or fines imposed, it was found that during the so called apprenticeship period which may extend to several months, children are paid no wages whatever. The practice is so widespread that no one ever takes notice of the fact. The period of wage payment may be a week, fortnight or month. No complaints were made about the delay in the payment

of wages. Sundays are usually observed as closed days in the *bhattas* and cutting shops, but the polishing and enamelling shops work even on Sundays. No daily wage earner is granted paid holidays.

C.—Working Conditions.

In the *bhattas* work is started rather early, at 5 A.M., and is continued up to 12 noon when workers break for an hour's recess. After resumption at 1 P.M., work is continued till 4-30 P.M. On an average, all workers work for 10 to 11 hours per day. The cutting shops commence work at 9 A.M. and finish after dusk, at about 7 P.M. Briefly, it may be stated that every *shishgar* or shop-owner has his own programme of work, and the hours of work, therefore, have neither been standardised nor regularised. As for the working conditions, attention has already been drawn to some aspects of the problem. It is impossible to describe sufficiently and accurately the wretchedness of the conditions in which labourers work. Distinction has to be made between conditions in summer and winter. In the former season, conditions become intolerable. In the *bhattas* sparingly clothed men, drenched with perspiration, work for the whole day. In the cutting shops, also, conditions were similar. Cases of fainting occur quite often. But it is in the joining shops where one finds the most filthy atmosphere. In most of the shops kerosene lamps are used for joining purposes. The atmosphere is stuffed with fumes of carbon oxides. In order to prevent a direct draught of air which makes the flame unsteady, the shop-keepers bar the entry of fresh air and thus prevent the escape of the fumes also. Most of the shops consist of just one most ill-ventilated and ill-lighted room. Things are much better in the polishing, painting and enamelling shops. There are no burners in them to stuff the air. The general health of the workers in the joining shops, specially of young children, was alarmingly poor. Most of them suffer from rickets and eye diseases. It is a sad paradox of the situation that while the Employment of Children (Amendment) Act, 1939 covers 9 industries, wherein working conditions are at par, or in cases even better, cottage shops in the glass industry have been left out of its purview.

D.—Miscellaneous.

There are no sanitary arrangements in or about the shops, and the nearest drain is used as lavatory. There are no arrangements for washing and bathing either. In summer drinking water is stored in ancient earthen pitchers which are seldom left clean. In case of sickness the only medical aid available in the town is that offered in the Government dispensary. The employers have made no arrangements whatsoever in this regard nor for the education of adult workers or children. Workers stay in their own or hired houses but sometimes the shop-owner or the *shishgar* provides accommodation to the employees,—half a dozen or so at nominal rents. In a couple of cases it was found that they run common messes also. The existence of indebtedness among workers is admitted on all hands though its extent has not been determined. Most of the workers owe petty sums. The interest charged is about 50 per cent. in most of the cases though there is no ceiling to this.

CHAPTER IV.—BENGAL.

For the purpose of the *ad hoc* survey in Bengal 17 out of 21 registered factories were covered. The number selected, comprising about 80 per cent. of the total number of glass factories in Bengal, can be considered a sufficiently large sample to yield representative data. The information collected from the selected factories may, therefore, be treated as giving a more or less complete picture of the industry in Bengal. Of the seventeen factories, ten were established since the war broke out, while the oldest one dates as far back as 1921.

In addition, it was reported that with the cessation of imports of glassware from Japan after the outbreak of the war in the Pacific, some 15 unregistered glass factories had sprung up in the Calcutta industrial area to cater for local needs which were up till now met by Japanese imports. Owners of glass factories, when asked about the future of the industry in the post-war period, expressed confidence in the future provided protection was granted in the immediate post-war years. Most of them pointed out that the possibilities of the glass industry in India in the post-war period should not be judged by the present quantity of products turned out, because the industry was handicapped by war-time shortage of chemicals and other ingredients essential for glass manufacture, and had been forced to produce articles irrespective of quality to meet the requirements of the market. It was not possible under the circumstances to improve the quality of the products and still maintain the required output. Most of the unregistered factories would probably have to close down in the post-war period as a result of foreign competition, unless improved methods of machine manufacture are adopted. It is a fact that most of the promoters of these factories are concerned with immediate profits and not with the development of the industry. The extent of employment in these small factories may not exceed 400 persons in all. Their main production consists of ink-pots, phials, paper weights, etc., which used to be imported from Japan before the war very largely. The blowers (the most skilled workers) in these factories are normally as skilled as the blower-helpers in the registered factories. Unless they acquired more skill, requisite for a blower of a big glass works, turning out goods of better quality, there would be a marked shrinkage in the demand for this class of labour in the post-war period.

I.—Employment.

The fillip given by the war to the industry has resulted in an increase in the number of the smaller factories rather than in that of the larger establishments. Taking into account the registered as well as unregistered factories, the total employment in the industry at present has increased by approximately 135 per cent., as compared to the pre-war level, in view of the fact that the total factory employment was 2,250 in 1939 and 4,490 (plus 460 for unregistered factories) in 1943. But this increase has not been even in respect of all classes of workers. Shortage of "blowers" even when high rates were offered was generally complained of by employers. A remarkable fact about skilled labour in the industry in Bengal, particularly the blowers, is that the province is almost wholly dependent on other areas, especially the United Provinces for labour supply. Women workers in all the factories surveyed were generally employed for grinding and packing. Children were found employed as mould holders. The blowers, as a rule, were Muslims. It was found that 90 per cent. of them had come from the United Provinces and the rest from the districts of Noakhali and Dacca in Bengal. This dependence on outside areas has proved a great handicap especially during the present war.

There was no classification of workers under "permanent" and "temporary" categories in most factories. The Scientific Indian Glass Co. Ltd. (the Sigco, for brief) was the only exception, where workers were thus classified. In this factory, confirmation follows the completion of a probationary period of six months, when the employees become eligible to the privileges of Provident Fund, free rations, two bonuses in the year and rent-free quarters, there is no system of apprenticeship for skilled workers in the industry. The shortage of skilled workers felt by the industry has amply justified the necessity of training. Employers questioned on this point stated that some early experiments in this direction had proved costly and futile. The trained workers invariably left their master to take up employment elsewhere on

higher wages. Moreover, blowers also, as a class, try to keep their trade secrets to themselves and show hostility to outside intrusion. By thus guarding their secrets, they seek to safeguard their economic position by restricting the supply of skilled operatives. The Hindus have so far shown disinclination to be trained as blowers on religious grounds, because the same blow-pipe may have to be shared by them with others, while Muslims have no such objections.

Recruitment.—Workers are generally selected by the managers, or their deputies or *mistries* authorised by them, from among those who present themselves for employment at the factory gates. This is the usual method of recruitment of unskilled labour. In regard to recruitment of skilled labour, however, the factories depend almost entirely on their own operatives to bring suitable candidates. Due to shortage of labour, recruits are seldom refused employment and are seldom “trade tested” before appointment. It appears that often there takes place a mutual pilfering of men and employers orally admitted that they had fairly accurate information about the quality, pay and prospects of skilled workers employed in other factories and that in emergencies such workers were offered higher rates of wages for luring them away. In view of the present acute shortage of blowers, the extent of this practice must be considerable. Some factory managers stated that they sent out their *mistries* as recruiting agents on commission basis to recruit skilled workers from Pirozabad and other glass producing centres.

Promotion, etc.—There is no system of graded or time-scale promotion in most of the factories. Promotion in almost all cases is possible at the discretion of the managers on the basis of efficiency and merit of individual workers. In one factory only, viz. the Victoria Glass Works, does the system of time-scale promotion obtain. There are no standing orders governing the relations between employers and employees in any of the factory. Nor are there any labour officers to look after the welfare of workers or to redress grievances. The manager himself in most cases is supposed to look into the grievances but in some factories for all practical purpose it is the head *mistry* who attends to them.

Labour Turnover and Absenteeism.—It has not been possible to obtain reliable figures of labour turnover or absenteeism for the industry as a whole. Only four factories furnished comparative figures for 1939 and 1943. From the statistics supplied, it appears that the turnover in August 1939 for the four factories together was as high as 68 per cent., while in January 1943 it had gone up to 98 per cent. Absenteeism in the same four factories from 1939 to 1943 did not show any appreciable change, the respective figures for the two years being 11.44 per cent. and 11.90 per cent. Higher rates of wages in rival firms was alleged to be the principal cause of turnover, and sickness of absenteeism.

II.—Wages and Earnings.

It is difficult to find any definite principle underlying fixation of wages. Prevalent rates in the locality appear to play a dominant part in this connection. Efficiency and the relative supply and demand of labour also have some bearing on the matter. Unlike organised industries payment of allowances, bonuses, etc., apart from the basic wage, are not a regular feature of the industry. Only a few of the factories surveyed paid dearness allowance while efficiency or profit bonus was seldom given even where output of a worker had shown a rise. Non-payment of bonus was one of the complaints of the skilled operatives. Where dearness allowance was paid it was found to vary between Rs. 2 and Rs. 7|8| per month and only a negligible proportion of the

claimed by employers that the increased basic wages were inclusive of allowances.

There is no system of payment on job or piece-rate basis, although each worker is required to produce a specified amount of work within the daily scheduled working hours. It has been reported by workers as well as employers, that normally the day's work can be finished well within the scheduled working hours. It may be possible to increase the output by introducing a system of bonus on the output in excess of the normal standard for the day, but perhaps employers do not wish to introduce such a system as it would lead to increased output at the expense of quality.

The following table gives the average increase since pre-war days in the basic rates of wages of the principal categories of workers in the industry.

TABLE 16.
Increase in the Basic Wages.

Name of occupation.	Average pre-war monthly rate (in Rs.).	Average present monthly rate (in Rs.).	Percentage increase.
Blower	60	102	70
Helper	33	65	97
Bubbler	24	47	96
Bubble Holder	19	32	68
Neck Maker	24	58	142
Fireman	37	71	92
Coolies	16	33	106
Others	20	38	90

It will be noticed from the table that the increase in wage rates though substantial has not been uniform for all classes of operatives. The average increase for all classes of labour has been approximately 95 per cent. whereas blower's rates have increased by 70 per cent.

The following table gives the average daily *earnings* in rupees of the principal categories of workers in the glass industry.

TABLE 17.
Average daily Earnings of Workers.

Occupations.	Basic wages earned (excluding over-time)			Total earnings (including over-time and allowances.)		
	Maximum.	Minimum.	Average.	Maximum.	Minimum.	Average.
Blower	3.85	2.89	3.42	4.46	3.21	3.85
Blower Helper	2.23	1.69	2.18	2.59	2.00	2.55
Bubbler	1.92	2.31	1.63	2.05	1.50	1.92
Bubble-holder	1.27	0.95	1.12	2.04	1.72	1.82
Neck-Maker	2.13	1.46	2.10	2.62	1.74	2.45
Mould-holder	1.11	0.81	0.93	1.11	0.81	0.93
Annealing Cooly	2.04	1.48	1.76	2.04	1.48	1.76
Fireman	2.45	1.68	1.99	2.92	1.89	2.35
Linoman	1.83	1.25	1.65	2.79	1.70	2.44
Machine Blower	2.00	1.33	1.41	2.29	1.70	1.96
Mixing Cooly	1.30	0.96	1.06	1.30	0.96	1.06
Women-Cooly	0.83	0.63	0.71	0.94	0.65	0.74
(Packer and Grinder)						
Cooly	1.27	0.69	1.28	1.54	0.92	1.28

It will be noticed from the above table that the "Blower" is the highest paid worker in the industry. The daily average earnings of this class of labour varies between Rs. 3.21 and Rs. 4.46. Unskilled female coolies, who are mostly grinders and packers, are the lowest paid workers and their daily earnings vary from Re. 0.65 to Re. 0.74.

Overtime and Deductions.—With exception of one or two factories no overtime is worked anywhere. It was stated by employers and also confirmed by workers that where overtime was worked, it was paid for at the ordinary rates of pay. No deductions are made from workers' wages except on account of advances and Provident Fund. Fines, it is reported, are rare. Only one factory has resorted to this method of punishing workers for misconduct, late attendance, etc. Fines are deposited in a Fines Fund is used for charitable purposes. The total amount to the credit of the Fund appears to be only Rs. 1|6|- at present.

Wage Periods, Waiting Periods and Paid Holidays.—Generally the bigger factories comply with the provisions of the Payment of Wages Act in respect of wage and waiting periods, but that is not the case with the smaller factories. Workers are paid mostly on a monthly basis. Wages for the month are generally paid on the 7th of the following month. During investigation, however, some cases were found in which the interval between the expiry of the wage period and the actual payment varied between 8 and 10 days. The system of weekly payment is prevalent in one factory only. In most factories where monthly payment is in vogue, the practice is to give advances once or twice during the month at the discretion of the management and this is deducted at the time of the payment of wages. Sundays are usually weekly rest days. But some cases come to light where this holiday has been denied or only partially observed. In such cases, it was reported, only 2 out of 4 or 5 Sundays were observed. Workers generally complained that there were no paid holidays except the Sundays which were observed and that they had to work on Sundays if a festival holiday had been granted during the week. It appears that even when workers are made to work on Sundays, previous sanction of the authority prescribed under the Factories Act is not always obtained. In no case of Sunday work, moreover, are workers paid at enhanced rates of wages.

III.—Working Conditions.

Hours of Work and Shift.—Two shifts are generally worked in the larger factories while in the smaller ones one shift is common. The number of hours actually worked in each shift varied generally from 7 to 9 hours with recess period varying between 1 to 2 hours. Spreadover in most cases did not exceed 10 hours and some cases of an 8-hours spreadover were also found. Hours of different shifts are generally as follows :—

First Shift : 7.30 a.m. to 5.30 p.m. (including 1 hour's rest interval from 1 p.m. to 2 p.m.).

Second Shift : 6 p.m. to 4 a.m. (including 1 hour's rest interval from 9 p.m. to 10 p.m.).

No multiple or overlapping shifts are worked in any of the factories.

Factory Premises.—The main factory premises, where manufacturing processes are carried on, are in most cases sheds open to all sides with corrugated iron sheets or tiled roofs and uneven *kucha* floor with little or no plinth height. As most of these sheds have no ceiling the heat in summer is oppressive. The furnaces located in these sheds add to the heat and make work

under these conditions almost unbearable. It was painful to see *small children* working for long hours under these sheds exhausted by constant exposure to the intense heat of the furnace, their faces bathed in perspiration and blackened with soot from the smoke of the furnaces! In smaller factories the tiled or thatched sheds were mostly in bad condition and the roofs in all probability afforded little or no protection against rain. In a small number of large establishments the sheds were found to have concrete floors and roofs. The mixing rooms are, on the whole, the worst feature of the glass industry. As the proportion of mixing various ingredients is a closely guarded secret, the mixing is variably done in closed rooms with usually one door and no windows. Working in these closed rooms with the air thick with dust of lime, silica and other chemicals is admittedly a serious danger to those who work there without adequate protection. Except in one or two large factories, the mixing coolies were not provided with gloves and mask to protect them against dust and lime. Injuries in the form of cuts and burns or scalding are a common feature in all the glass factories. Women and children generally employed in selecting cullets for remelting and mould-holding were found to suffer most from injuries of these types. Injuries from burns were also frequent in the case of helpers bubble-holders and neck-makers who worked with molten glass without gloves or any such other protection. In factories manufacturing glass tubes, cutting of glass by means of red hot electric wires was common. As no gloves were given to these electric cutters, the handling of the wires was a source of positive danger. No attempt has anywhere been made to introduce a system of artificial cooling which in view of the heat from the furnace seems extremely necessary. Ventilation and lighting are generally good, as most of the factory premises are sheds open on all sides. The only factory where the factory premises have been laid out according to a well thought out plan on modern lines and where due attention has been paid to ventilation, natural and artificial lighting and adequate floor space for worker, is that of the Scientific Indian Glass Co. Ltd. Generally speaking, though there is adequate floor space available to workers in almost all the factories, actually one gets the impression that the bubbleblowers and annealing chamber coolies are cramped for space and it is possible to eliminate the number of cases of burns and scalds if the space allotted for these workers to work in were more.

Rest Shelters.—In none of the factories are workers provided with rest shelters. It was found in some factories that during the rest interval workers were compelled to sit in the open under the shade of trees and have their "tiffin" which they purchased from hawkers at the factory gate. In another small factory, it was found that for want of sufficient space outside the factory premises, workers somehow squeezed themselves as far away as possible from the furnace which nearly covers the entire space under the shed and had their tiffin which they brought with them from their homes. Rest interval in all cases was not sufficiently long to enable workers to go to their homes for their meals. It was reported that workers did not go to their homes even when these happened to be near the factories as the rest interval was too short and workers were penalised with fines (not admitted by employers) if they happened to be late in returning to work. The condition of workers in the absence of either adequate rest intervals or rest shelters, especially in factories where no such space was available, was deplorable.

IV.—Sanitation and Welfare.

Sanitation.—The sanitary conditions in factories and their surroundings are generally bad. The chief reason for this is the *kachcha* drains in and absence of either adequate rest intervals or rest shelters, especially in factories from workers regarding water supply latrines, washing and bathing facilities

in the larger factories, except in one, where it was reported that no latrines and urinals were provided for workers. In the smaller factories employing less than 50 workers, these arrangements are practically non-existent. In such factories, needless to say, no separate arrangements have been made for female workers. No factory supplies cool water to the workers in summer. Filtered water is generally supplied for drinking purposes.

Health.—In 8 out of the 17 factories there is no Medical Officer. As there was no periodical medical examination of workers anywhere, occupational diseases could not be detected. But Asthma and skin diseases are said to be common ailments of workers in the industry. Workers alleged that lungs of the blowers, especially of mouth blowers, are affected after 2 or 3 years of continuous work. In one factory, it was reported that bubblers usually suffered from itches, probably due to constant exposure to the heat of the furnace. Boric Cotton, Iodine and ordinary liniments only are available to workers in case of accidents like burns and cuts. In smaller factories, the time-keeper is usually in charge of these medicines. Two factories (the Sodepur Glass Works and the Scientific India Glass Company, Ltd.) have got their own properly equipped dispensaries with whole-time M. B. Doctors in attendance. Only 5 factories out of 17 have their own dispensaries and 4 have made arrangements with private doctors who have dispensaries close to the factory, allowance to such part-time doctors varying from Rs. 30 to Rs. 50 per month. Medical report from the *Sigcol* reveals that there were 319 cases of cuts and 36 cases of burns in 1944 (up to October) and these cases received free treatment at the dispensary. There is no system of periodical examination of workers. Employers as a rule, refuse to admit that there could be any occupational disease in this industry. It is, however, alleged by workers that blowers have normally short life. In the absence of any medical evidence, it is difficult to substantiate this statement.

Canteens.—Canteens were found only in 3 factories. Of these, two were maintained inside the Factory area and the remaining one (of the *Sigcol*) outside the factory compound though very close to it. The first two were run by private persons under the direct supervision of the management, while the other was managed by the Company itself (*Sigcol*). The first two factories, viz., the Sreegobinda Glass Works and the Bharat Glass Works supply only tea, bread and biscuits to the workers at the market rates. A special feature of the canteen run by the *Sigcol* is that workers are given one tiffin consisting of *chapati*, *dal* and sweets. This canteen has been very popular with workers in spite of their caste and religious prejudices. Complaints were made by the workers against canteens run by some managers elsewhere, particularly about the bad quality of the cooked food and comparatively high cost. The popularity of the canteen run by *Sigcol* is attributed to the excellent quality of food supplied *free of cost*.

Creches.—Though women workers are employed in both small and big factories in large numbers no creche for children is maintained by any of the factories surveyed. In certain factories, nursing mothers were found to be working with babies on their lap or on improvised straw beds near their place of work.

Grain Shops.—Only five factories were found to maintain grain shops. Rice, *atta*, *dal*, mustard oil, salt and sugar were supplied to workers normally at Government control rates from these stores though in a very small number of cases these articles were sold even at concession rates. A case, for instance, is that of the Hardeo Glass Works of Dacca which sold rice at Rs. 10 per maund, whereas the control market rate was Rs. 16. *Sigcol* is again an outstanding exception among the factories surveyed in this respect. Food grain

were supplied to workers free of charge. This benefit, however, is extended to their permanent staff only, the temporary workers being supplied rations at concession rates only. It is reported, however, that some of these 17 firms used to supply rice and *atta* during the famine period at concession rates to workers.

V.—Housing.

The total number of workers employed in the 17 factories surveyed is 4,628, of which 762 or about 17 per cent. are housed in employers' free workers. These 11 factories with a full strength of 3,066 have accommodated 762 or in other words, about 25 per cent. of their workers, free of rent. The usual types of houses are : (1) *kutchha*, *bustee* type houses accommodating 36 per cent. of the total number of workers actually housed, and (2) *pucca*, generally barrack type buildings, accommodating approximately 64 per cent. One employer, namely the Glass Producers, has rented two two-storeyed barrack type *pucca* buildings and a few huts in the *bustees* for accommodating their workers. The workers are accommodated on the top floor of the two-storeyed building, the ground floor being occupied by shops. But the rooms accommodating the workers are very spacious—14 ft. \times 10 ft.—and with a number of windows. The houses in the *bustees* rented by the firms are reported to be better ventilated than the usual ones and are in a better condition of upkeep also. In one factory alone an attempt has been made to provide family quarters with separate arrangement for kitchen (Bharat Glass Works). These family quarters have been allotted to the blowers who live with their families. The second type of accommodation afforded by this Company is the same as the first with the exception that the units have slightly smaller rooms and have been allotted to workers to be used as messes. The third type of accommodation in this Company is *kutchha* shed consisting of two rooms—30 ft. \times 20 ft.—accommodating 25 workers per room. These have been allotted to coolies generally.

VI.—Trade Union.

There is no trade union worth the name among the glass workers of this province, nor have works committees been set up in any of the factories. The mobility of labour from factory to factory and from province to province is said to be the chief obstacle in the way of the formation of trade unions among these works. A trade union named the Calcutta Glass Workers' Union was formed in December 1942 and registered on the 15th February 1943. Its membership on the 31st March 1943 was 327. The income of the union during the period from November 1942 to March 1943 was Rs. 18|12- and the balance at the end of the same period was Rs. 1|13|6. The membership is limited only to persons working in "glass-blowing" companies in Calcutta and its suburbs. Very little is known about the activity of this union.

VII.—Working of Labour Acts.

All the factories surveyed come within the purview of the Factories Act the provisions of which according to employers, are duly complied with. The enquiry revealed that the visits of the Factory Inspectors have been generally few and far between. A fairly large number of factories had not been visited by any Inspector in the course of the last three years! Neither are any records of the visits of the Factory Inspector maintained in most of the factories. In one factory only, where a record of visits has been maintained, the Factory Inspector's report points out defects in the fancing of machines. It was stated that the Inspectors did not insist on the Companies maintaining any permanent record of their visits, although the usual practice is that in case violations are noticed during inspections, notices are sent to the factories which are kept in a file as permanent record. Though the provisions of the Maternity Benefit Act, the Payment of Wages Act, the Workmen's Compensation Act and the Factories Act are claimed to have been duly complied with

by managers, violations of some of the provisions of these Acts were too obvious to escape detection. Contravention of the provisions of the Factories Act in respect of employment of children below the age of 12 is a common occurrence in all the small factories and a few of the larger ones. Quite a large number of children below 12 were found to work as mould-holders and also as coolies. In some cases, they have been found employed as neck-makers, exposed to the intense heat and glare of the furnace. Even where child labour above the minimum age was engaged, no distinction was made between them and adult workers in respect of hours of work. Children below the statutory minimum age when questioned as to their age in each of the factories, in a majority of cases significantly said that their age was 18 years. It was obviously the result of tutoring by employers at the time of appointment. In 90 per cent. of such cases the factories had not even obtained certificates regarding age from a certifying surgeon. The reason for employment of child labour under the present stress of labour shortage is obvious. For example, children are employed as neck-makers and are made to work for an equal number of hours with the adults but paid much less on the plea of age and experience. It was reported that most of the unregistered factories are almost wholly manned by children with only a very small percentage of skilled or semi-skilled adult workers.

In none of the factories employing female labour, is there any record to show that maternity benefit has ever been paid. The usual reply of employers was that such cases did not arise in their factories. The survey brought to light the fact that employers in small factories are generally themselves ignorant of labour legislation. It is no wonder, therefore, to find a violation of the acts in these factories. In certain cases where employers appeared to be cognisant of their liability under the Maternity Benefit Act, they engaged widows only or discharge female workers at the first intimation of their pregnancy. Employers who were blissfully ignorant of their liability under the Act stated that pregnant women worked even up to 10 days before confinement and that they returned to work a fortnight after. These employers expressed surprise that such women received any monetary help to meet the expenses of childbirth and stated that the female workers had to incur no expenditure during confinement !

The employers have been taking advantage of the ignorance and illiteracy of workers as also the absence of trade unionism. The provision regarding display of notices giving relevant sections of the various Acts both in English and in the vernacular have hardly served any purpose at all as most of the workers are illiterate.

As has already been stated no case of occupational diseases has been reported from any of the factories in the industry. The report of an accident in the *Sigcol* was the only information available regarding accident statistics. As the accidents generally are of a minor nature like cuts, burns, etc., no record of such accidents is maintained, nor are they reported to the Inspector of Factories. Two cases have come to light in which employees sustained major injuries, one in the *Sigcol* where a worker lost his right arm. The worker in question was examined during the enquiry and he corroborated the statement of the Company that all the medical expenses were borne by the factory during his convalescence. He was also paid a compensation of Rs. 1000 and given employment again as supervisor on recovery. The compensation money has been deposited in a bank in the name of the worker and he will be paid the capital plus the interest at the time of his retirement. In the Sodepur Glass Works, all technical personnel are covered by insurance with a private company. Three cases of accidents occurred in 1943 and compensation according to the Act was paid by the Insurance Company to the persons concerned.

VIII. *Indebtedness.*—A great majority of workers are indebted to private moneylenders, the principal causes of borrowing being low income, high cost of living, extravagant expenditure on ceremonies, etc. The rate of interest charged generally ranged from 20 to 30 per cent. per annum. As the indebtedness of workers is almost chronic, remedial measures should first come from the management by way of increase in wages where these are below the subsistence level, and opening of co-operative credit societies attached to the factories to dispense with the ubiquitous *Kabuli* who has found in the poor and illiterate factory labour a safe and profitable field of investment. The system of granting advances once and even twice a month almost to all workers would show that the earnings are generally inadequate.

IX. *Provident Fund and Gratuity.*—The *Sigcol* is the only factory where the members of the permanent labour staff are given the benefit of a Provident Fund. There is no pension scheme or gratuity in existence in any of the glass factories surveyed. The absence of special privileges in the shape of provident fund, gratuity and such other long term benefits which could have developed in the workers a sense of loyalty to the factories has encouraged unfair and harmful competition between different employers (in the glass industry) who offer higher and higher rates of wages to obtain the services of workers employed by others. Increase in wages is, therefore, to a very limited extent due to the increased skill of operatives or rise in the cost of living. Far-sighted factory-owners have stated that the industry in the post-war period will not be able to face foreign competition at a high labour cost, unless the rates of wages of blowers and other skilled operatives are commensurate with their skill. Stabilisation of labour in the glass industry can be brought about by filling in the existing gaps in respect of payment of long-term benefits like provident fund, gratuity and pensions.

CHAPTER V—BOMBAY.

I.—Introductory.

The glass industry in the Bombay Province owes its origin to the Paisa Fund Glass Works of Talegaon (Poona) which was the pioneer in the field. In fact, it may be stated the Talegaon factory served as a training centre for many of the pioneers of the glass industry in other parts of India,—Bahjoi in the U.P., Calcutta, Bombay City and Suburbs, Ogalewadi, Bangalore, Nagpur, Trivandrum, etc. Before the establishment of the Paisa Fund Glass Works in 1908, the manufacture of glass hollow-ware and press-ware was totally absent in India. Inspired by the swadeshi movement of the first decade of this century, one Mr. A. D. Kale collected a few thousands from the masses collecting one *pice* from each contributor (hence the name, Paisa Fund, *i.e.*, one-pice fund), and started the Works with the help of certain political leaders as a school of glass technology. A few Japanese experts and Mr. Varshneya, who had taken training in Japan and who later started the U.P. Glass Works of Bahjoi, trained the students not only in the manufacture of glass products but also in the theory of glass technology. One happy result of their activities has been that at present most of the glass factories in India are fully managed by Indians, without any help from outside. The credit for the growth of the glass industry in India thus goes to the oldest factory in India at Talegaon, started with an inspired ideal. At the same time, one cannot help feeling that the factory, which has served creditably, as a training centre, could also have been run as a commercial concern catering for the needs of the public. If that were possible, it would have been a nucleus of glass industry in the Bombay Province, if not in India as a whole, with its innate

advantages of priority in the field, active public support, availability of selfless workers, economical working due to cheap labour and raw materials, location, etc. The main cause of this failure appears to have been that the Paise Fund was a *public* institution with too many persons trying to control its affairs.

The progress of the industry in the Bombay Province has been very slow, and, as may be seen later, several of the concerns investigated by us have been of war-time origin. The industry has expanded considerably during recent years, but even now it can, scarcely be included among the major industries of the Province. The following figures reveal the development of the industry in the Province (excluding States).

TABLE 18.
Number of Factories and Workers (1940-43).

District.	1940		1943	
	No. of Factories.	No. of worker.	No. of Factories	No. of Workers.
Bombay City	2	481	3	1,921
Broach & Panchmahals	1	548	1	392
Poona	1	297	1	282
Sholapur	1	88	1	93
Bombay Suburban .. .. .	..	..	6	605
Total	5	1,414	12	3,293

Note.—The above figures refer to factories covered by the Factories Act, Sec. 2(j) and 5.

The expansion is due to the establishment of 7 new factories out of which 6 are in the Suburbs of Bombay. The figures show that the expansion has taken place mainly by way of an increase in the number of factories rather than in the average size of individual concerns.

Sampling of Units.—All the factories referred to above fall under the Factories Act. There were, however, numerous concerns (especially bangle-making workshops) which were not covered by the Act. The unregulated concerns, however, were of a small size, employing few workers and having limited resources. Moreover, there were a few large concerns in the neighbouring States to which evidently the British Indian laws did not apply. All these factors were taken into consideration in the selection of samples. Altogether 7 units as detailed below were chosen for investigation on the spot.

TABLE 19.
Glass Factories Investigated.

	No. of Factories.	No. of Workers.
I. Factories covered by Factories Act.—		
Bombay City	3	1,921
Poona District	1	282
Sholapur	1	93
II. Factories outside the scope of Factories Act.—		
Bombay City	1	13
Indian States	1	1,410
Total	7	3,719

II.—Employment.

The table below gives the number of workers in the seven concerns investigated at various dates during war time. Except in the case of G-1 and G-3, there does not appear to be any marked expansion in the number of workers employed. The expansion in G-1 and G-3 has been the result of war-time demand of Government for manufacturing bottles, tumblers, flasks, etc.

TABLE 20.

Changes in Employment in Units chosen.

Concern.	Date of Establishment.	Period.	No. of workers employed.			Total
			Men	Women	Children	
G1	1934 (incorporated into limited Co., on 1-4-43	1939 ..	273	21	..	294
		1943 ..	1,291	195	..	1,486
		Jan. 1944 ..	1,253	201	..	1,454
G2	Jan. 1943	Jan. 1943 ..	280	150	..	430
		1943 ..	183	120	..	303
		Oct. 1944 ..	231	166	..	397
G3	1916	Aug. 1939 ..	452	14	71	537
		Aug. 1944 ..	1,087	54	269	1,410
G4	1908	1939 ..	265	21	..	286
		Aug. 1939 ..	241	26	..	267
		1943 ..	227	32	23	282
		Jan. 1944 ..	258	36	16	310
G5	1939	1939 ..	48	31	..	79
		1943 ..	54	39	..	93
		Dec. 1944 ..	40	20	..	60
G6	Jan. 1942	Jan 1944 ..	13	..	..	13
G7	1938	1939 ..	106	26	..	132
		Aug. 1939 ..	122	29	..	151
		1943 ..	105	26	1	132
		July 1944 ..	113	28	7	148

Female labour, whose wage-rates have been invariably lower than those of males, are employed in this industry as grinders, cutters, moulders, packers, sorters and in the soda test and "broken" departments. G1 has got a scientific section, where 40 girls of pre-matriculate standard are employed in preparing scientific glass apparatus such as currettes, burettes, condensers, capsules etc. In 1944, six of the investigated concerns had employed 505 females, out of which 201 were in G1 and 166 in G2. Children are often employed in glass concerns, but many of them, it seems, are declared as adolescents and even as adults.

These children work as coolies, as ordinary packers, and even as cutters. In G3, which is a concern in a small Indian State, there were 269 children in August 1944. In other concerns there are sufficient grounds to believe that child labour is being employed. For example, in the case of G2 the Factory Inspector noted down in the Inspection-Book that he once noticed two children running out of the blowing department.

Length of Service.—Only three out of seven concerns had been established before 1938. The figures of length of service for these three concerns are given below :—

TABLE 21.

Number of Workers who have served for.

				Less than one year.	1—5 yrs.	5—10 yrs.	Over 10 yrs.
G1	..	..	..	386	357	..	..
G3	..	..	..	753	410	140	107
G4	..	..	..	41	110	20	32

As for the other concerns, the figures about length of service are of little use, partly because the concerns are comparatively new and partly because of the lack of interest shown by the employers in the maintenance of statistical data. Due to constant shifting of labour, it is difficult to come to any conclusion as regards length of service. From the muster-rolls of G1, it is clear that many workers, especially skilled ones, have resigned once, twice or even thrice, and have joined again in the same factory. Another example is of G5, which is even now being closed often because of shortage of local and of raw materials and also because of inefficient management. Employment of labour is consequently irregular and intermittent and every year practically a new set of workers is employed.

Classification of Workers.—In most of the factories there is no regular classification of workers into permanent and temporary categories. Generally, the workers are daily-rated and monthly paid and are often discharged without any notice. The reasons seem to be the infant and unorganised state of the industry, absence of any facilities, which distinguish a permanent from a temporary worker and the smallness of some concerns, where the relations between employers and employees are more personal than businesslike. Even in those concerns which claim to have permanent and temporary class of workers, many of the privileges such as holidays, leave, etc., are practically same for both the categories. Distinction is, however, made for the purpose of Provident Fund, bonus and increments.

Apprentices.—In none of the factories, there seems to be any system for ordinary or supervisory posts. Skilled workers are required in some of the processes of manufacturing hollow and press-wares. However, such labour can be easily trained in a few months. The Talegaon Works, as we noted in the beginning, had been started with the idea of imparting theoretical and practical training and for the first few years students were taught such advanced subjects as physical chemistry, glass technology, heat measurement, fuel technology and geology. At present, it is doubtful whether except for a few members of the superior staff, anybody in the modern glass factories knows anything about the theoretical side of glass technology. The result has been a lack of progress as far as initiative and new methods are concerned; research by intelligent and interested students in glass technology would have been of great value in this respect. Most of the workers are at present little educated and their training at the hands of the supervisors or foremen is mechanical and routine. Even in the scientific section of G1, non-matriculate boys and girls are employed to work on the preparation of highly technical and accurate apparatus. In respect of the apprentice system, one of the factories stated that unless and until full arrangements were made for the training of the workers, it was no use giving admission to apprentices in any factory.

Promotions.—Generally there seems to be no system of graded or time-scale promotion, except perhaps in G3, where skilled workers get an annual promotion of Rs. 5, and unskilled workers of Rs. 2 to 3 according to the efficiency of the workers. Though it is claimed that promotions are given on merit, *i.e.*, on the ability and efficiency of the workers, they are generally granted mainly at the discretion of the employer. Often a worker threatens to go away on the pretext that he is offered higher wages outside and his wages are increased !

Labour turnover.—The following figures give some details of labour turnover in three out of the seven concerns investigated.

TABLE 22.
Labour Turnover in Three Factories.

Factory.	Period.	Aver. daily No. of workers.	No. of workers left.				% of monthly turnover
			Retired.	Dismissed.	Vol. left.	Total	
G2	Jan.—Oct. 1944 (10 months.)	302	<i>Nil</i>	<i>Nil</i>	585	585	19.4
G3	{ Aug. 1939	537	<i>Nil</i>	<i>Nil</i>	10	10	1.9
	{ Aug. 1944	1,410	<i>Nil</i>	<i>Nil</i>	44	44	3.1
G4	{ 1939	286	<i>Nil</i>	<i>Nil</i>	103	103	3.2
	{ 1943	282	<i>Nil</i>	<i>Nil</i>	383	383	11.3

The above figures reveal that there are no retirements or dismissals and the labour turnover is solely affected by the number of persons, voluntarily leaving the concern. Another fact is that labour turnover has increased during war-time, possibly because of the demand for labour, both skilled and unskilled. To remedy this evil, an employer suggested that a sort of general agreement should be arrived at between employers that no worker coming from another factory would be employed, without a proper discharge certificate from the concern last served by the worker. It is, however, doubtful whether this method would prove practicable, as it amounts practically to black-listing.

Absenteeism.—Figures of absenteeism are substantial just after the wage-period and in the first week of each month. The reason for the first is that the workers, with ample money in their pockets, are tempted to spend it in enjoyment or in going to their native places for domestic or other reasons. The reason for the second is that the worker exhausts all his money and has no ready cash with him. To earn hard cash, he sometimes absents from his factory and works as a cooly or takes to some such work which gives him ready money. The following figures show the extent of absenteeism in a few concerns :—

TABLE 23.
Absenteeism.

Factory.	Period.	Av. No. of workers on roll.	Workers absent.	Percentage of absenteeism.
G3	{ Aug. 1939	500	60	12
	{ Aug. 1944	1,400	100	7.1
G4	1943	282	41	14.5
G5	1944	13	1	7.8

The main cause of absenteeism given by the workers is sickness. Other causes are difficulties of securing foodgrains or other articles, private business, accidents, etc. One factory suggests substitution of labour-saving machinery wherever possible without affecting the industrial efficiency and securing the greatest results at the least cost. It is doubtful whether this measure would reduce absenteeism on the average.

Recruitment.—The problem of recruitment has been aggravated by the outbreak of war. The factories required blowers, chemists, and other technical labour, and alluring offers were made to skilled workers, who lost no opportunity of improving their prospects, when better terms and facilities were offered to them. The result has been that skilled workers from other factories are constantly lured away by higher emoluments. One of the employers admitted that it imported "stolen" skilled labour from Talegaon, Bombay and the Hyderabad State. However, this labour though imported after payment of railway fare and advances by the factory often runs away, being allured by better prospects elsewhere! This complaint of labour being "stolen" seems to be common in every glass concern. G1 imports at its own cost skilled labour from the U.P., but many of the workers thus imported are enticed while in transit by agents of rival concerns, in spite of the fact that advances are granted to these workers. The U.P. workers are supposed to be more skilled, partly because of the development of the industry there and partly because of the aptitude of the U.P. workers. However, the manager of G1 complained that when these workers brought down to Bombay, they often lose their skill and work slower than before.

Labour Officers.—There is a Labour Officer only in one factory. He does the work of recruitment also. In other factories, Labour Officers are not considered necessary, mainly because of the small number of workers and also because of financial difficulties. The grievances of a single individual or of a group of workers are looked into by responsible men, directly in contact with the workers, such as the mucedam, foreman, or manager.

III.—Wages and Earnings.

Wage-rates.—Appendix IV gives details of wages of various classes of workers in the different departments of G.1, one of the biggest-glass factories. The wage-rates for some important categories of workers in other investigated factories are given below:—

TABLE 24.

Rates of Wages.

Name of Occupation.	G2		G3		G4		G5		G7		
	1939	1944	1939	1944	1939	1943	1939	1944	1939	1944	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Supervisor .. .. .	..	..	50	70	..	..	..	..	48	60
			p. m.								
Blower	60	100	45	65	20	30	30	90	25	60	
Bubbler	30	45	8	14	14	17	15	45	20	20	
Cuttar .. .. .	..	..	18	21	14	17	..	..	14	16
Carboy-maker .. .. .	..	..	..	..	25	40	..	..	..	..
Fireman	30	60	20	29	20	32	30	60	15	40	
Gatherer	45	80	13	16	16	22	..	..	..	..
Helper .. .. .	..	..	..	..	18	26	25	60	25	34
Packer .. .. .	..	..	12	30	18	30	..	..	22	30
Coolies {	Male	30	45	12	18	12	20	5 as.	12 as.	12	15
	Female	17	25	p. d.	4 as.	6 as.	10
			p. m.					p. d.			

NOTE.—The figures of G5 include dearness allowance.

There seems to be a wide variation in the rates of wages. Wages are generally low in the mofussil areas, and particularly in factories situated in Indian States. In all cases, the rates have increased since 1939 and the rise is on an average about 50 per cent., though it is very much higher in the case of skilled workers.

Principles of wage fixation.—The principles determining the fixation of wage-rates for ordinary workers depend upon their availability (supply and demand), the urgency of production, the financial stability of the concern, and the cost of living in the locality. The wage-rates of the skilled workers depend upon their efficiency, experience, scarcity, or monopolistic position. All these factors vary from one category to another in the same industry. Generally, when a new worker comes at the gate, his trade-test is taken before recruitment by the foreman in charge of the section, or by the engineer, or by the production (works) manager, and the wage-rate, generally the minimum for that trade, is fixed. Promotions, therefore, are at the sole discretion of the manager.

Dearness allowance.—There is no uniform or regular system of dearness allowance in this industry. Appendix IV (in the footnotes) gives details about various allowance and bonus paid to the workers of G1. In this concern, as well as in G5, G6 and G7, workers are paid according to market rates and then the difference between the current pay and the pre-war pay is treated as dearness allowance. Thus, the dearness allowance (which is practically the difference between the gross earnings and basic wages) is scarcely demarcated and varies in case of individual workers and their categories. In G7, for example, dearness allowance calculated in this manner varies from Rs. 12 to Rs. 33 in the case of men, and from Rs. 6 to Rs. 10 in the case of women and children. In G2 and G3, dearness allowance is calculated as a certain proportion of the wages and amounts to $6\frac{1}{4}$ per cent. in the former concern and 60 per cent. in the latter. Lastly, in G4 the monthly dearness allowance (known as attendance allowance) is paid at a flat rate and is Rs. 10 for furnace workers, Rs. 8 for other male workers, Rs. 6 for female workers and Rs. 4 for children. Dearness Allowance is conditional upon a minimum number of days' attendance by the worker and is reduced proportionately for the days of absence. In G7, however, if a worker is absent for more than three days without permission, he is not entitled to the attendance allowance.

Bonus and other allowances.—Bonus is paid in only three of the concerns investigated. In G4, permanent workers are paid one month's pay every year. In G3, bonuses amounting annually to 2 months' pay have been paid for the last 3 years. In G1, two kinds of bonuses—a war bonus and "standard production bonus"—are paid to the workers. Details will be found at the end of Appendix IV. The other allowances granted to workers are rent allowance (or concession in rent where housing is provided by the employer), cycle allowance and festival *bakshis*. In G1, free quarters are provided to workers of the blowing department; in G4 concession to the extent of 50 per cent. of the rent, amounting to from Rs. 2 to 5 is given to workers living in quarters provided by the factory. Rent allowance in G7 is given only to 10 persons and the amount varies from Rs. 3-8-0 to Rs. 9 per month. Cycle allowance of Rs. 2 per month is paid in G3 to 27 workers, who stay in the town four miles away from the factory. Arrangements are also made to bring their food in tiffin-carriers from the town through a factory servant.

Earnings.—Appendix V gives details of wages and earnings for various categories of workers in the glass factories investigated. There seems to be a wide variation in the rates of wages and earnings. All the figures are for time-rate workers; only in G4, where 20 coolies and 6 masons were employed at

the rates of Rs. 1-4-0 and Rs. 3 per day respectively by a contractor for building a new furnace, piece-rate work was found. This piece-rated contract labour, however, is only temporary, *i.e.*, till the furnace is built. Similarly a burud in G5 is paid Rs. 25 for preparing 100 bamboo baskets in which the glass products are packed and dispatched. The raw material for the baskets is supplied by the factory. The wage figures in Appendix IV show that women are paid for lower wages than men, often for the same job. In the Ampoules Department of a factory, where scientific apparatus is being made, the maximum a male worker gets is Rs. 180 per month, while the maximum for the female workers is only Rs. 75 per month. Women working as grinders, packers, cutters, sorters and coolies invariably get lower wages than men working in the same jobs. Children work as packers and coolies in this industry and are the worst sufferers.

Overtime.—Overtime is worked in factories where there is a shortage of workers and where war orders are executed. Overtime, where it is worked, is paid according to rules laid down under the Factories Act. In G3, a factory in an Indian State, overtime is paid at $1\frac{1}{2}$ times the normal rate. In G2, furnace workers are denied the holidays with pay that are given to other workers and hence they are taken as working overtime on these days and are paid accordingly. On the whole, however, overtime is rarely worked in this industry, and wherever it is worked it is not compulsory. Registers are maintained to record overtime and they are available for inspection.

Deductions.—Deductions are rare. In G1 and G5, advances paid are recovered by instalments from wages paid. In G3, deductions of 1 annas as school tax and annas 2 as medical tax are made. Besides, from those who live in quarters provided by the factory the following amounts are collected: Re. 1 to Rs. 5 as house-rent, Re. 1 for electric lamps per point, and As. 4 as water and conservancy charges. In G4, the deductions are made for boarding charges, advances and grain issued. G7 found that repeated warnings and instructions regarding the loss to be borne by the factory resulting from bad work improve the tone of the workers. They are given to understand the importance of good work which would give them promotions and which would also do good to the factory. Workers in this industry are rarely fined and hence there was no fine fund in any of the factories investigated.

Wage payment.—Generally most of the workers, except those who are permanent like supervisors, foremen and some skilled workers, are daily-rated and monthly paid. Following the Payment of Wages Act, all factories which employ less than 1,000 workers (*i.e.*, G2, G4, G5, G6 and G7) make payment on the seventh of every month. G1 makes general payment of wages on the 5th and before the 10th of every month. G3 which is in an Indian State and hence outside the scope of the Payment of Wages Act, pays its workers according to convenience from the first to the fifteenth of the month. In G2, wages are paid on the 6th of each month to men and on the 7th to women. If the dates happen to fall on Sundays or other holidays the date just preceding is fixed for wage disbursement. Those who do not turn up on the days fixed for wage payment are paid as and when they present themselves.

Sundays and holidays.—Generally Sundays are observed as holidays; but if any "public holiday" falls on a week day, the next or previous Sunday becomes a working day. If the workers are daily-rated, these holidays are without pay, but if they are monthly rated, the holidays are considered to be with pay. However, in G2, some holidays with pay are given in addition for festivals. Also in G3 about 17 half-paid holidays are granted to workers in addition to Sundays. It seems that the nature of work in most of the factories necessitates continuous furnace work and so the furnace workers get holidays in rotation.

The following figures from the Factory Statistics show the number of days worked by some factories in 1943 :—

TABLE 25.

Number of days worked during the year 1943.

Day or Night Shift.	G1		G2		G4	G7
	Day Shift.	Night shift.	Day shift.	Night shift.	Day shift.	Day shift.
No. of days	310	310	355	303	293	313

IV.—Working Conditions.

Shifts and Hours of Work.—The following table gives the details about shifts, hours of work, lunch interval and total spreadover in the factories investigated.

TABLE 26.

Shifts and hours of work.

Factory.	Details of shifts.	Hours of work.	Lunch interval.	Actual hrs. worked.	Total spread-over.	
G1	One—General	Begins at 8 A.M.	Closes at 6 P.M.	12 NOON—1 P.M.	9	10
		(i) 12 mid-night.	8 A.M.	6 A.M.—6-30 A.M.	7½	8
	Three—furnace	(ii) 8 A.M.	4 P.M.	12 NOON—12-30 P.M.	7½	8
		(iii) 4 P.M.	12 NOON	8 P.M.—8-30 P.M.	7½	8
G2	Two—blowing	(i) 8-45 A.M.	6-15 P.M.	11 A.M.—11-15 A.M.	8	9½
				1 P.M.—2 P.M. ..		
			4 P.M.—4-15 P.M.			
	(ii) 6-45 P.M.	4-15 A.M.	8-45 P.M.—9 P.M.	6	7½	
						11 P.M.—12 midnight
	Three—furnace	(i) 9 A.M.	5 P.M.	} Recess according to convenience.	..	8
(ii) 5 P.M.		1 A.M.				
(iii) 1 A.M.		9 A.M.				
One—finishing	8-30 A.M.	6-30 P.M.	1 P.M.—2 P.M. ..	9	10	
G3	Three ..	(i) 2 A.M.	10 A.M.	} ½ hour's recess in each shift.	7½	8
		(ii) 10 A.M.	6 P.M.			
		(iii) 6 P.M.	2 A.M.			
G4	One—General ..	8-30 A.M.	6-30 P.M.	1 P.M.—2 P.M. ..	9	10
G5	One—General ..	8-30 A.M.	6-30 P.M.	12-30 P.M.—2 P.M.	8½	10
		(i) 8 A.M.	4 P.M.	} No. recess ..	8	8
			(ii) 4 A.M.				12 mid-night.
(iii) 12 mid-night.	8 A.M.					
G6	One—General ..	9 A.M.	6-30 P.M.	12-30 P.M.—1-30 P.M.	8½	9½
G7	Two—General	Adults	6-30 P.M.	} 12-30 P.M.—1-30 P.M.	9	10
		8-30 A.M.	2-30 P.M.		5	6
	Three—Furnace	Children	8-30 A.M.	} One hour recess according to their convenience.	7	8
		(i) 8 P.M.	4 A.M.			
(ii) 4 A.M.		12 NOON				
(iii) 12 NOON	8 P.M.					

In all the cases, furnace workers have three continuous shifts, because of the continuous nature of the work involved. The number of workers in these shifts are very few. The above table also shows that though there are a number of shifts, there is no "overlapping" in any one of them. As for hours of work, it seems that the glass factories have been exempted from Sections 36 (Daily Hours) and 38 (Spreadover) of the Factories Act.

Factory Conditions.—The factory building is generally open on all sides, being usually built as a big shed with arches and hence natural ventilation, lighting and protection against heat are assured. On the whole, however, conditions in this respect conform to the minimum standards laid down under the Factories Act and the Bombay Municipal Act. There is some congestion, especially in the City of Bombay where the newly built or expanding concerns feel acute scarcity of land, more so because of the Government notification prohibiting the construction of any new buildings without previous sanction. Congestion is also felt in mofussil areas because of small structures. The building of G5, for example, is a shed with an area of about 60 ft. \times 70 ft., with *kacha* ground smeared with cowdung. In the same factory, boots or other means for protecting the feet from glass splinters and from heat are not provided by the Management and the workers have to make their own arrangements in this respect.

Shelters.—Shelters have been provided in only three out of the seven concerns investigated. Out of these, the shelters in G2, which are two rooms (one for men and another for women) are being at present utilised for residential purpose, because of acute shortage of housing accommodation. The factory authorities have applied for permission and material to build new quarters for workers and when the quarters would be built the two rooms will be utilised for the original purpose. In G3, three buildings measuring 80 ft. \times 84 ft. have been built as shelters. The rest-rooms of G4 are built in a rural fashion. Other concerns do not think it necessary to have shelters or rest-rooms, either because their workers live close by or because they can take rest in the factory premises.

V.—Welfare activities.

Latrines, Urinals, Water-supply, etc.—The following details reveal that the factories have provided what may be called as "statutory welfare", *i.e.*, the minimum standards prescribed under labour legislation for the welfare of the workers :

TABLE 27.

Latrines, Urinals & Watersupply.

Factory.	No. of workers employed.	No. of latrines.	No. of Urinals.	Water supply.	
G1 ..	1,450	13	5	2 water tanks & taps.	
G2	{ Men	231	6	..	1 bath room & taps.
	{ Women	166	4	..	1 washing place & taps.
G3 ..	1,410	7	..	Well water.	

In G4, water for bathing and washing purposes is available from a lake about 2 furlongs from the factory. Drinking water is supplied through water-taps in urban factories and through earthen pots in rural areas.

Medical Aid.—Only two concerns have maintained dispensaries the details of which are :

TABLE 28.
Dispensaries.

Factory.	No. of workers.	Medical Staff & their monthly remuneration.	Cases treated per day.
G1	1,450	Part-time L. C. P. S. Doctor (Rs. 125)	25
G3	1,410	M. B., B. S. Doctor (Rs. 125), Compounder (Rs. 40) & Dresser (Rs. 18)	150

Allopathy is the system followed and the common diseases are malaria, bronchitis, and conjunctivitis, skin and eye diseases, minor cuts and burns. No mention is made of any occupational disease in this industry. In other factories, first-aid boxes are kept. Minor cases of cuts and burns, that are so common in this industry, are treated by first aid, while serious cases are sent to the nearest hospital. Periodical medical examination seems to be completely absent in this industry.

Canteens, creche, schools and grain shops.—Very little has been done in all these matters. Only G3 has got a canteen which is run by a contractor and where tea and meals are provided at rates 25 per cent. lower than those in the market. In Bombay City a number of hotels exist near the glass works and the workers take advantage of them. A number of workers bring their lunch from home and eat it in the rest-interval in the factory compound. Though a number of women have been employed in this industry, none of the factories has provided any creche for its female workers. In 1940, the Bombay Government issued notifications requiring 154 factories ordinarily employing 100 women or more to provide facilities for infants of working mothers. In G1, even though there are over 200 female workers, no creche is maintained, the reason given being the fact that most of the workers are unmarried girls between 14 and 18 years of age. In G2, a creche was maintained, but for want of space, the room is now being utilized for some other purpose. G3 thinks a creche unnecessary because almost all its female employees stay nearby. Educational facilities are also almost totally inadequate, in spite of the fact that a large number of adult workers, both men and women, working in this industry are illiterate. There is not a single factory where any arrangement is being made to educate adult workers of the factory. In G7, once an attempt was made to educate the workers but was ultimately given up owing to insufficient response and lack of enthusiasm on the part of the employees. G4, which has provided housing accommodation to a third of its employees, has maintained a school for the children of the workers. Most of the factories, however, have opened grainshops for their workers. In the City of Bombay rationing is in force and all the big factories have been asked to open in their premises grain shops, which stock and sell rationed grains at controlled prices. The three glass factories in Bombay City, which come under the Factories Act, have maintained grain shops since 1943 for their workers. It was, however, found that many workers prefer to register their cards in shops nearer to their residence. G4 provides only non-rationed articles in its shops. G7 sells all rationed grains at lower than the market prices ; only sugar and kerosene are sold at controlled rates. Out of the seven concerns investigated, only two (G5 and G6) have not maintained their own grain shops.

VI.—Housing Accommodation.

Housing provided by employers.—Five out of the 7 concerns have provided housing accommodation for some of their workers. The details are given below :

TABLE 29.
Housing facilities provided by employers.

Factory.	Total No. of workers employed.	No. of workers housed.	Rents charged p.m.	Types of Houses.	Remarks.
G1	1,250	750	Nil	Single rooms for workers, Double rooms & qrs. for staff.	Mostly workers imported from U. P. are housed.
G2	430	150	Nil	Partly pucca houses (single storey), & partly temporary structures.	
G3	1,410	300	Rs. 3 to 4	Permanent structures of reinforced concrete; a room and a kitchen (w.c. & bath-room) for each family.	The structure is under construction.
G4	310	50	Nil	Well-built rural huts.	
G5	60	5	Nil	5 small huts of straw & hay built in a gypsy fashion.	Huts are built by workers themselves on factory's ground.

The conditions regarding congestion, sanitation and water-supply are unsatisfactory. Sub-letting, though usually prohibited, cannot be avoided especially in the urban areas, where the problem of accommodation has become very acute in war-time. Consequently, considerable congestion has taken place. G2 complains that three times applications were made seeking permission to build quarters for workers, but so far with no success. Majority of workers, therefore, somehow manage to live in ordinary temporary structures. Naturally, the conditions as regards ventilation, light, etc., are poor and even irritating and disgusting. These conditions, however, are not far different from those of the workers, who live in houses provided by private landlords or public bodies. Most of the workers in Bombay live in slums, which to the City's disgrace still exist in areas like Mazgaon, Parel and Mahim.

VII.—Trade Unions and Strikes.

Trade Unions and Works Committees.—The labour in the glass industry is not sufficiently organised. There are two unions in the field, but both seem to be inactive. The Glass and Enamel Workers' Union of Bombay was found in March 1943 and is affiliated to the Indian Federation of Labour. It is an unregistered union and claimed 679 members in 1944. The other trade union is confined only to the workers of Ogale Glass Works, Ogalewadi (in Aundh State). None of the factories has got a Works Committee. In the absence of a trade union or a Works Committee it is doubtful whether the genuine grievances of workers come before the Management for consideration.

Strikes.—Most of the concerns have been recently started and hence there have been very few strikes in this industry. The details of the two strikes that have been reported are given below :

TABLE 30.
Strikes.

Factory	Strike started on	Duration of Strike.	Cause of the Strike.	Result.
G2	3-12-1943 ..	One day ..	Women workers demanded increase in wages.	Demand was accepted.
G3	1-7-1944 ..	One day ..	125 workers demanded 50 per cent. extra pay for overtime worked.	Ditto.

VIII.—Factory Legislation.

Factories & other Acts.—Two of the 7 concerns investigated do not come under the Factories Act, one because of its small size and the other because it is in an Indian State. In the latter case, however, most of the provisions of the Factories Act are followed, though no regular factory inspection has been arranged by the State. The same is the case with the other Acts—Electricity Act, Payment of Wages Act, Workmen's Compensation Act and Maternity Benefit Act. The factories, which come under the Factories Act, are generally visited twice and in some cases thrice every year by the Factory Inspector. The Inspection reports of the Factory Inspectors reveal that the factories do not properly lime-wash the latrines, fail to display the extracts of certain Acts and do not adequately fence the machinery. The factories also observe all the other Acts mentioned above, however, there seems to have been no cases either under the Workmen's Compensation Act or Maternity Benefit Act and hence no compensation or benefit was paid in 1943.

IX.—Indebtedness, Provident Fund and Gratuities.

Indebtedness.—Some idea of the extent of indebtedness of the workers can be had from the loans granted to them by the factories. In a few factories, there is the practice of paying advances to workers against earned wages. In G.3, it has been discontinued because such a practice 'enhance the indebtedness'. Monetary help, however, is granted on account of marriages and such other personal matters; no interest is charged on these advances. Skilled workers (particularly blowers) of G.2 are almost all indebted, on an average of Rs. 150 each, causes, being marriages and heavy demands from members at their homes. The rate of interest is 9 per cent., but in cases where the loan duration is of a few months only, no interest is charged at all. The high rate of 9 per cent. is kept to discourage loans as far as possible. The workers of G.1 are indebted to the extent of Rs. 20,000 to the factory. Maximum indebtedness in case of an individual amounts to Rs. 300 while the minimum comes to Rs. 20 to Rs. 40. All these amounts have been given to workers as advances for personal and other domestic purposes. A number of workers, who had taken advances from the works, left the factory without repaying the loans. No interest is charged on these advances and the amount is regularly recovered from the wages of the workers every month at the time of payment.

Provident Fund.—Out of the seven concerns investigated only G.2 has got a Provident Fund system. It is open to all workers, permanent or temporary; every worker is to subscribe towards the Fund in each month a sum equivalent to one twelfth of his actual monthly salary and a sum equal to it is contributed by the Company. The whole amount is then credited to the member's account. The member is entitled under certain conditions to the company's contribution after a service of five years.

Gratuities.—At present there is no pension scheme or gratuity given to any worker or workers, irrespective of his or their length of service, in any of the factories investigated. In G.3, however, gratuity equal to half a month's salary for each year of service put in is under consideration in case of workers who have served for a continuous period of 20 years or more.

CHAPTER VI.—THE PUNJAB.

The glass industry in the Punjab is still in an incipient state. It was introduced there by a few enterprising industrialists from Allahabad and Calcutta, and while one of them was established in 1931, other started working later, a majority having sprung up since the outbreak of the war. The principal centre of the industry in this province is Amritsar, where there are 4 factories,

while at Lahore and Ambala there is one factory each. The Amritsar factories produce mostly bottles, while the Lahore factory has specialised in the production of optical glassware and the Ambala factory produces both scientific goods and hollow-ware. For the purpose of investigation, however, only Amritsar was chosen, where it was possible to undertake a detailed enquiry in all the four units. While the industry is not seasonal in the usual way, in actual practice these factories work only for 150 or 200 days in the course of a year, excepting one which works perennially. The "season" of these factories depends entirely for its duration on the supply of coal and raw materials. Since, in recent times, supplies of these have been irregular, the concerns have had to stop work off and on. The practice has been to work at top speed and for all the 24 hours of the day as long as coal and raw materials are available and then to dismiss all workers as soon as stocks of both are exhausted. In most cases, even the technical staff is dismissed and all efforts are made to keep expenditure on labour at the minimum possible. Glass factories are exempt from the provisions of Section 35 of the Factories Act (Weekly Holidays) under Rule 96 of the Punjab Factories Rules and therefore continuous work is possible at any time.

I.—Employment.

Three of the factories started working after the commencement of war after 1942. The figures of employment given below refer to the month of October, 1944.

TABLE 31.
Employment in Selected Concerns (1944).

Average daily No. of workers.	G 1	G 2	G 3	G 4	Total for all factories.	%
Total	98	128	141	184	551	100
Piece-rate	49	29	..	24	102	18.5
Time-rate	49	99	141	160	449	81.5

As for the method of payment, it may be mentioned that while all the four factories employ women as sorters and packers no attendance registers are maintained for them and payments are made daily. They are all piece-rate workers and wages are calculated on the basis of baskets of broken glass sorted or bags of bottles packed. They are employed and paid directly. *Children are not employed in any capacity.* Only in one factory 49 workers, all piece-rate, are employed and paid through contractors. The rest are employed and paid directly by the employers. There is no difference between the wages of men employed and paid directly and of those employed and paid through contractors. The blower-contractor brings his own men who work as a well-combined team and this increases output. The question of the length of service hardly arises in the case of the operatives of factories which are seasonal for all practical purposes. However, one factory recruits labour on permanent basis, but since this was established hardly two years ago no generalisations can be based upon the data given. The only thing that can be said is that unless work is spread over the year and glass factories are brought under the provisions of Section 35 of the Factories Act, workers will never have more than a few months' continuous service to their credit in any particular concern. It was found that the number of workers who had put in over one year's service was 130 out of a total of 551 in October, 1944.

Where workers are employed permanently, some additional privileges accrue to them. Generally, they are allowed leave with pay in case of illness or urgent work necessitating absence. They are also paid when the factory

stops work for a brief duration. Most of the employees are monthly-rated wage-earners but deductions are made for absences. Factory G3 has a very commendable system. When the factory stops work and there is no possibility of resumption of work within one month, they ask their workers to elect between (a) sitting idle at the factory on full pay, and (b) going home on half average pay. In the latter case they are required to keep themselves ready to proceed to the factory at short notice. This has had a very desirable effect upon the workers and as will be seen later it has caused labour turnover in that factory to disappear altogether. There is no regular system of apprenticeship in any of the factories but in G3 one worker known as "apprentice" is being trained as a turner. He works for 8 hours a day and is paid Rs. 1|4/- per day. His period of apprenticeship will be counted towards total service. The Managing Director said he had a plan to institute a regular system of apprenticeship in his concern. That way he hopes to be able to train up skilled workers in his concern and solve the problem of labour shortage. In other concerns, there is no idea of having such a system unless the "helpers" to blowers are to be regarded as apprentices learning the work of blowers. While, however, they help the blowers to increase his output by 75 per cent. they are not paid commensurately. In the course of two or three years they learn the job and become regular blowers themselves.

Labour turnover.—The table below shows labour turnover in the 4 factories.

TABLE 32.
Labour Turnover in Selected Factories.

Unit.	Average daily employment.	No. of workers who left.	%
G 1	68 in Oct., 1944	24	35.3
G 2	193 in Oct., 1944	20	10.3
G 3	141 in Oct., 1944 .. .. .	..	..
G 4	{ 82 in Sept. 1939	8	9.7
	{ 184 in Oct. 1944	90	48.9

As pointed out in the beginning, the glass industry in the Punjab is very young and so skilled and semi-skilled workers have to be brought from the older centres like Allahabad, Firozabad, Calcutta, etc. In one concern, out of 150 workers 100 have been brought from Calcutta. [The Managing Director of this concern had a glass factory of his own there and in 1942 he shifted the machinery to Khasa (Amritsar) and brought most of his workers also with him.] These workers, therefore, like to go back to their home town as often as possible. This results in heavy turnover. The process of blowing glass into shape is mechanised in one concern only and there too it is semi-automatic, requiring a helper to finish the process. As a result blowers are in great demand and they are being paid considerably higher wages now. The newly established factories of this province find it difficult to recruit labour except by sending out paid agents to entice away the workers of other concerns. Travelling allowances and advances are paid and the temptation of getting a lump sum is too strong to be resisted by workers. Other factories follow suit thereby setting up a vicious circle from which there is for the present no escape. The good old adage "as one sows, so one reaps" is illustrated nowhere better than here. The malpractice of bribing away the workers has brought into being a regular set of blowers who have made it their profession to take advances from concerns and run away after working for a couple of days. It is not meant that all labour turnover is caused by this process. What one would like to stress here is that the morale of some of the workers is being

jeopardised permanently. Immediately, however, it is the workers who benefit and it is the employer who suffers from the consequences of his own manoeuvres. The more serious part of the trouble is that due to the defection of workers production has had to be cut down suddenly and in a few cases breaches of contract have occurred. When blowers were questioned on this point, they said that while they are induced to leave the job which they hold at the moment and advances are made on the condition that not more than a tenth of that would be deducted every month from their earnings, in actual practice the whole sum is deducted in the very first month and they are left at the mercy of the moneylender. This embitters them and they leave the concern if they have chances of getting better terms elsewhere. It is necessary to mention here that the two glass factories in Khasa (Amritsar) have recently formed an Association and one of the articles of the Association provides that no member shall engage the workers of any other concern. This has reduced turnover as in that village alternative employment is not available.

Absenteeism.—Figures of absenteeism could be obtained only from one concern in which it was 6.84 per cent. in October 1944, but a perusal of the attendance registers of other concerns showed that the percentage was probably higher elsewhere. As stated above the two glass factories by their agreement, have reduced labour turnover. Indirectly absenteeism also has been lessened. The manager of one factory stated that absenteeism was largest on the three days following the pay-day. An examination of the attendance registers bore him out; for, quite one-fourth of the workers would not come for two days after receiving payment. While the reason put forth by the employers was that workers got drunk and made merry, the workers said that those who belonged to the neighbouring villages went home for just a couple of days to make proper arrangements for the family and look after things personally. Both the contentions seemed to be true.

II.—Wages and Earnings.

The fact that this industry is suffering from an acute shortage of skilled labour accounts for the very appreciable increase in wage rates since 1939. All the workers except blowers and unskilled coolies are employed on monthly salaries, while the latter are paid on piece-rate basis. The blowers are paid the same rate for a "batch" of bottles of different sizes but the number of bottles per batch is inversely related to their size. Thus while a batch of 1 oz. bottles contains 60 bottles, that of 12 oz. bottles only 30, so that the piece-rate for 12 oz. bottles is double that of 1 oz. bottles. The implication is that the blower would ordinarily produce 30 12-oz. bottles in the same time as 60 1-oz. bottles. Details of batch figures are given below.

TABLE 33.
Number of Bottles in different batches.

Size of the bottle.	1	2	3	4	6	8	12	16	32	Nips.	Pints.	Quarts
oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.			
No. of bottles in the batch.	60	55	50	45	40	35	30	25	16	35	25	20

The average earnings of blowers have increased by about 300 per cent. in the course of the past five years. The rate per batch of bottles in the pre-war days lay between Anna 1 and As. 1½. The current rates range between As. 4½ and As. 6. Unlike wages paid to other categories of workers, those paid to blowers have been continuously increasing right from the first day of the present war. Thus while the general wage level in the glass factories in 1942 was about 30 per cent. above the pre-war level, the wages of blowers had gone

up by 120 per cent. and more. The salary of the mistry in charge was about Rs. 50 per month in 1939. In 1944, in three of the four concerns investigated in the centre the salary of this workman was Rs. 150 p.m. In the fourth he was being paid Rs. 400 p.m. Full details with regard to wages paid in the Punjab Glass Factory are given in Appendix VI, and the following table only summarises the wage position.

TABLE 34.

Average monthly earnings.

Occupation.	Average Monthly Earnings		Increase %
	1939.	1944.	
	Rs.	Rs.	
Mistry in charge	50	150	200
Firemen	20	50	150
Drivers	20	55	175
Mixers	15	40	167
Coal coolies	15	35	133
Blowers	50	200	300
Helpers	25	75	200
Rulsawalas	20	65	225
Moulders	10	30	200
Gaugemen	10	30	200
Linemen	12	34	183
Miscellaneous coolies	12	30	150

In one factory coolies are classified in three grades and are paid Re. 1, Rs. 1|2|- and Rs. 1|4|- per day. Coolies are recruited in the beginning in the first grade and are gradually promoted if found honest and diligent. Women workers (packers and sorters) earn on an average As. 14 per day, while men workers (odd coolies and packers) earn Re. 1 to Rs. 1|4|- per day. *Blowers* are known as "contractors" also, and the terms of their contract are as follows: Each contractor is allowed to engage at his cost a helper and also a *rulsawala* (who works at the necking furnace). The *rulsawala* is paid partly by the factory and partly by the blower under whom he works. Generally blowers are paid Rs. 45 per month for the services of the *rulsawala* over and above what they earn themselves. After receiving payment from the factory each blower pays to his helper and the *rulsawala* as per agreement. Average gross earnings of a blower are Rs. 400 per mensem out of which he pays Rs. 75 per mensem each to his helper and *rulsawala*. Thus, on the average, his net earnings are about Rs. 250 per month. There is hardly any difference these days between the rates of wages for labour employed through contractors and that employed directly. Moreover, in these factories labour for same or similar occupations is employed either in one way or the other and not in both the ways simultaneously and hence there is no opportunity for comparing rates of wages.

Rationable of Wage-fixation.—Wages are fixed in most cases by the interaction of the laws of supply and demand. All depends upon the availability of labour and also of coal for if supplies of coal were stopped, demand for labour would fall and wages would go down. The skill of the workers is an important though not the determining factor in fixing the wages of technical staff like the *mistry* in charge, or the workshop mistry. As for dearness allowance, the proprietors say that the wages include it at the rate of As. 2 per rupee. Thus, if a worker is paid Rs. 2|4|- per day, his basic wage would be Rs. 2 per day and a dearness allowance of As. 4 per day.

Overtime, fines, etc.—Only in two factories do workers put in 'overtime' and the method of calculation and payment is different. In one, if a person works for one hour, he is paid for two hours. If the worker puts in more than one hour's but less than 4 hours' over-time, he is paid half the day's wages; but if he works overtime for more than 4 hours, he gets full day's pay for that. All payments are made in *cash, daily*. In the other factory, overtime slips are issued to the workers and these are paid for at the time of monthly payment at the rates laid down in the Factories Act. No registers are maintained in either case and enquiry revealed that in practice overtime was compulsory. Fines are not imposed anywhere and no deductions are being made. Wages are paid monthly and by the 7th of the month following, but advances are usually made fortnightly and these are taken into account when payments are finally made at the end of the wage period. No interest for such advance is charged. Most of the workers are daily wage earners, in the sense that no payment is made for the days when they are absent. Only the superior technical staff (*mistry* in charge, or the workshop *mistry*) is paid for the whole month and no deductions are made for authorised absence. Application for leave is seldom rejected.

Holidays.—Glass factories are exempt from the provisions of Section 35 of the Factories Act and they work continuously for all the days of the month. The only condition attached to the grant of this privilege is that they must allow one paid holiday to each worker after 14 days of work. Evasion even of this rule is not rare, and the files in the Office of the Chief Inspector of Factories revealed that at one time or other all of them had been prosecuted for the breach of this rule successfully. By an ingenious manipulation of the attendance register, they make inspection difficult and the evasion can be detected rarely. In one case it was found that one page of the attendance register was set apart for each blower and his staff. It often happens that the same worker (Moulder or Gangman) works under different blowers in the course of one month and hence his name is entered on several pages and attendance marked there. It is, therefore, clear that one cannot find out either the actual earnings of a worker or whether he has had a paid holiday after fourteen days of work.

III.—Working Conditions.

Hours and shifts.—Two or three shifts are being worked and each is of 8 hours' duration. This is for the blowers and his staff and the firemen. Only one factory allows a rest interval of one hour after four hours of work and the spreadover in this case is 8½. Hours of these shifts are :—

(i) *When three shifts are worked :—*

From 12 midnight to 8 a.m. ; 8 a.m. to 4 p.m. ; and 4 p.m. to 12 midnight.

(ii) *When there are 2 shifts without rest :—*

From 12 midnight to 8 a.m. ; and from 8 a.m. to 4 p.m.

(iii) *When there are 2 shifts with rest :—*

(a) 9 a.m. to 1 p.m. ; 2 p.m. to 6 p.m.

(b) 8 p.m. to 12 midnight ; 1 a.m. to 5 a.m.

There is, besides the above, one *general* shift for the *mistry* in charge, workshop *mistry*, office staff, packers and sorters. This is of 10 hours' duration inclusive of an hour's rest between 8 a.m. and 6 p.m.

Ventilation, etc.—Glass factories are open from all sides and the workers work near the furnaces and the annealing chamber. Dirt and dust found in other factories are entirely absent. The entire area is generally clean and

flooring space is adequate. The only trouble is that workers are liable to fall victims to severe cold and even pneumonia in winter or rainy season. Sometimes during the rainy season workers rush out of the shed and into the rain when the heat of the furnace becomes intolerable and such exposure has often caused them to remain confined to bed for weeks together. There are no shelters for workers anywhere.

IV.—Welfare Activities.

Water is supplied by tube-well arrangement but the number of taps in some cases is inadequate. Sanitary conditions were unsatisfactory in the two factories situated in the town of Amritsar but in those at Khasa things were much better. It was found that the number of urinals and latrines was inadequate. The factory rules require 5 latrines for 100 workers and this requirement is scarcely satisfied anywhere. Sweepers are usually employed but the urinals and latrines in a majority of the factories are very dirty. The two glass factories at Khasa have formed an Association along with two other factories and these four factories contribute equally towards the cost of the maintenance of a dispensary. This dispensary is under the charge of a qualified doctor (M.B., B.S.) and is well-equipped. Cases treated are mostly those of cuts, burns and malaria. The Secretary of the Amritsar Labour Federation thinks that proper care of workers is not being taken and the doctor usually keeps himself busy attending upon the employes and their families! Despite the fact that a regular dispensary is being maintained, there is no periodical medical examination of workers. In the other two factories, only first-aid facilities are provided though one of the employers claimed that he had arranged for weekly visits by a qualified doctor.

In no factory have arrangements been made for canteens or adult education, or grain-shops. In one factory only, arrangements have been made for supplying grain at cheap rates to the workers. Some adjoining land has been set apart for growing *vegetables* and these are distributed to the workers *free of cost*.

V.—Housing Accommodation.

Before giving a description of the housing provided, it would be better to point out that since workers are mostly brought from the U.P. or Bengal, they have to be provided with accommodation to insure their continuous services. Even where no houses are owned by the firm, small buildings are rented and workers are housed therein. Local workers are not provided accommodation in any of the concerns. Technical staff is given preference over others. In one factory alone a compensatory house allowance is paid to those workers who are not provided with housing accommodation and the amount paid is about Rs. 2 p.m. The proprietors have no housing policy of their own. The present housing arrangements are only meant as a temptation to workers in order that they may not leave the concern. As already said there is a shortage of labour in this Province and, therefore all means fair or foul are adopted to collect workmen. It is very doubtful whether the present arrangements will continue when the problem of labour shortage has eased. The total number of workers in these four factories at present is 569 and out of these 240 or 42.4 per cent. are provided accommodation. All this housing is provided *free of rent*. The less said about these houses the better. Invariably single room tenements (8 ft. × 10 ft.) are provided. Though the walls are *pucca*, flooring is generally of mud, and the roofs in one case were found to be made inflammable thatch. Elsewhere roofing also is *pucca* brickwork. Latrines are usually built at some distance from these tenements but in one factory which is situated in the town proper, no latrines were provided and workers were expected to go to the open fields. For the superior technical workers quarters with one room a verandah and a kitchen were provided but it is

interesting that no latrines had been built in the houses and the occupants were expected to use common latrines. Flooring in these houses was *pucca*. In one factory the employer claimed that he had built clean *pucca* rooms (10 ft. \times 12 ft.) with verandah for his workers. On inspection it was found that the so-called houses were actually godowns without any closed doors and ventilators, the only difference between these and over godowns was that men rather than silica were dumped here! In a single room 8 ft. \times 10 ft., from 3 to 4 workers lived and cooked food within the room. The result can be imagined. Sooted walls and ceiling were noticed everywhere. Rooms presented a congested and dirty appearance. There was only one solitary exception where workers were somewhat clean. It was obvious that rooms had not been white-washed for a long time. Sub-letting was not reported anywhere. Sanitation was very bad and a dead drain full of mud and dirty water in front of the rooms was not an uncommon sight. It is no wonder that malaria was the most prevalent disease. Besides, there were no bath-rooms anywhere and female workers both bathed in the open under the taps.

VI.—Trade Unions and Strikes.

Labour in the glass industry in this Province is characterised by the complete absence of organisation either permanent or *ad hoc*, and this is largely due to the *de facto* seasonal character of the industry. Besides, labour is mostly brought from outside the Province and the binding force of common language is sometimes absent. Further, these factories are generally situated outside the town proper and in two cases at a distance of 9 long miles. This prevents contact between the trade union of the city and the workers in these factories. Thus unless these concerns work throughout the year and labour turnover is reduced, there are not many chances of any union worth the name developing among the workers. There have been no strikes in these factories and in view of the above it is not surprising.

VII.—Factory Legislation.

All the concerns come under the Factories Act and as to whether the provisions of the Act are complied with, one may do well to refer to the files maintained in the Office of the Chief Inspector of Factories. Every year, prosecutions are launched for breach of some section or the other of the Act but mostly for working unauthorised overtime, giving the workers no paid holiday after 14 days of continuous work or for keeping urinals and latrines very dirty. As for the steps taken to acquaint the staff with the provisions of these Acts, huge charts giving extracts from them sometimes in English only and often in Urdu also were found hanging on the walls. However, this has failed to serve the purpose owing to the workers' illiteracy. The workers were questioned on the point and it was found that except the technical people, the ordinary worker is hardly aware of the existence of such Acts. Besides, even those who have heard of a thing called "compensation" did not know about the extent of their rights and the machinery to enforce it. A few who knew the whole process had no mind to go to the court for fear of being thrown out of employment.

Occupational Disease.—No information about the existence or extent of occupational diseases was available. It is obvious that unless there is a periodical medical examination of workers by an independent doctor, there is no possibility of detecting the origin of an industrial disease. There is no clear demarcation between occupational and natural diseases. The diseases which blowers are likely to develop are asthma, bronchitis, and other lung diseases including consumption. The incidence of asthma was pretty high and a substantial minority of blowers were suffering from it.

Accidents.—One fatal accident occurred in 1942 in one of the factories. The facts of the case were that one Ram Harak, aged 50 years, was working as

a coal-man for the gas-producer on Rs. 15 per mensem. His duty was to carry coal to the gas-producer by climbing up the wooden ladder provided for the purpose. One day Ram Harak had brought a sufficient quantity of coal to the gas-producer which blocked the passage to its feeding hole. As he began to remove the coal on one side, his foot slipped and he fell down on the wooden ladder. One of its sides struck against his stomach and pierced it. His intestines came out and he died while being removed to hospital. According to the attendance register the deceased was employed beyond prescribed hours inasmuch as his hours of work were shown from 8 a.m. to 12 noon and from 1 p.m. to 5 p.m., whereas the accident took place at 8 p.m. The Manager explained that the working hours of the deceased along with his other co-workers were wrongly recorded by the time-keeper in the attendance register, and actually he worked in the second shift from 4 p.m. to 12 midnight with effect from 26th July 1942. He also stated that the deceased was in the habit of taking intoxicating drugs and the accident might have taken place while he was under the influence of the drug. It is not known whether any compensation was paid. This was the only accident reported so far. The most common accidents are burns and cuts and in every factory there are usually a dozen cases of burns and more of cuts every month, mostly of a minor character but sometimes serious also. If cases of burns are not treated properly in the very beginning, these develop into wounds, cure becomes difficult and the period of disability long. The Secretary of the Amritsar Labour Federation alleged that when serious cases of burns occurred, the victims were packed off after paying third class and a little money, and since workers went back to their native places in the U. P. or Bengal, detection became impossible. The presumption was in favour of this view, and the contention of employers that there never was an accident does not carry conviction.

Inadequacy of the inspectorate was stressed very strongly by the Secretary of the Amritsar Labour Federation. There are six districts in the Amritsar circle and for the whole circle there is one Inspector of Factories who is also the Superintendent of Industries and Inspector of Wages. Even annual inspection of each factory becomes impossible and, therefore, generally provisions of the Payment of Wages Act are disregarded and wages are paid at the discretion of the Management. When occupiers or directors are prosecuted, the fines imposed are ridiculously low, from Rs. 2 to Rs. 5, for each offence in most cases.

CHAPTER VII.—MADRAS AND BANGALORE.

Two factories were selected for investigation in the South, one at Tondiarpet, Madras, and another at Bangalore. The Madras factory had not been working for some time and was recently taken over and revived by a new management in July 1944. This condition of infancy is partly responsible for the lack of information on several points caused by incomplete material in the records. On the other hand, the Bangalore factory, managed by a firm reputed for efficient management of a number of new glass factories in several centres has been able to establish a strong labour force since 1938 and the data obtained were much more reliable. In 1943, the total employment in the glass industry in Madras was 747, and though recent figures are not available, it could not have exceeded 1,000 by now. The Madras factory investigated had 392 workers on its register in August 1944, and it was stated that the total number sometimes went up to as much as 500. The Bangalore factory was of almost the same size, having a total number of 331 employees on its rolls in November 1944, and was the only modern glass factory in the Mysore State, though indigenous bangle manufacture on a very small scale was also carried on in Kolar, Hassan and one or two other districts.

I.—MADRAS.

This factory uses coal for its furnaces and electricity for running the cutting, grinding and other machinery. Shortage of coal and irregular supplies, of even the quantities of it available have, according to the management, resulted in the factory having to be closed from time to time and this has caused a fall of output as well as irregularity of employment for workers.

A.—Employment.

The factory employed, on an average, 392 workers per day in August 1944, of whom 182 were men, 160 women, and 50 children. The total number on rolls on some days goes up to 500. As the concern is started very recently, they have not devised any system of classifying workers as permanent and temporary nor any system of maintaining service records or registration cards. All labour is temporary, and the unskilled labour is treated as casual labour, to be employed in the numbers required from time to time by the factory. There are no time-scales or systems of graded promotion. There is no system of apprenticeship either. Most of the skilled labour is drawn from outside, particularly Poona. This labour is said to be very unsteady and migratory in character, going from concern to concern with the attraction of higher wages.

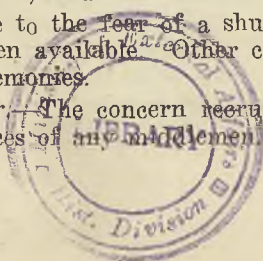
Labour Turnover.—Figures for turnover are exceedingly difficult to obtain, as the registers and pay-rolls maintained are highly defective. Cases of dismissal and retirement are not found anywhere, and the cases of workers who have actually left, to the extent recorded at all, are shown as all being voluntary. The average daily employment in August 1944 was 342. Out of these, 61 left the establishment in the month. Hence the monthly quit-rate was 17.8 per cent. These figures exclude boys, a large number of whom are sometimes temporarily employed. The high proportion of labour turnover thus indicated is explained, so far as skilled labourers are concerned, as due to their desire to return to their native place in some cases, and in others due to the tendency to go from concern to concern on an offer of higher wages. Among unskilled workers, the tendency is partly due to workers going for other work in the city when available, because there is always the fear of the factory being shut down due to shortage of coal.

Absenteeism.—The calculation of absenteeism in this concern has again proved to be a matter of great difficulty owing to the unsatisfactory condition of the registers. The names of a large number of persons are kept on rolls, out of whom some may have to go without work as the concern does not choose to employ them on certain days, and these people are marked as absent. Again, workers' names are not struck off rolls as soon as they leave the concern, but are kept there and those who have left are marked absent! These factors vitiate the figures for absenteeism, and these have, therefore, to be treated as useful only to a very limited extent. The total number of possible working days, obtained by adding up the number of days for which each person's name was on the rolls, was 7,999 for August 1944. Of these, the number of working days lost due to absence was 1,706. This works out at 21.32 per cent. of absenteeism. This high percentage of absenteeism in the concern can be explained by two factors already touched upon;

(i) the fact that the management itself employs workers on each day according to its requirements; and

(ii) the fact that due to the fear of a shut-down, workers choose to take up other work as and when available. Other causes are mainly domestic, like sickness and religious ceremonies.

Recruitment of labour.—The concern recruits its labour directly and does not make use of the services of any middlemen. The skilled labour is brought



from outside areas by the management themselves, and the labourers are paid travelling allowance from their native places. Unskilled labour comes to the factory of its own accord, new labourers being brought by people already working. There are no standing orders governing the relations between employers and workers. There is no Labour Officer. One of the Assistant Managers, it is said, specially looks into the requirements of labourers and their grievances. It was stated that every week a meeting was held between the management and representatives of workers, who were chosen one from each section by the workers themselves to redress grievances of workers.

B.—Wages and Earnings.

In this concern, all wages are paid at monthly rates, calculated on the basis of all the days in the month including Sundays and other holidays. Thus, the calculation of amounts payable for workers in August 1944 was on the basis of 31 days in the month, though the concern worked only for 26 days in the particular month. The total earnings (gross as well as net) per month for the important occupations in the concern are given below :—

TABLE 35.
Earnings of Main Workers.

	Minimum		Maximum		Average.
	Rs.	Rs.	Rs.	Rs.	Rs. A. P.
(1) Mistries	90	150			122 0 0
(2) Blowers	75	90			86 0 0
(3) Helpers	35	50			47 0 0
(4) Bubblers	25	50			36 9 7
(5) Neck-makers	70	75			71 10 8
(6) Liners	25	50			32 8 0
(7) Men coolies	15	25			17 10 8
(8) Women coolies	14	15			14 5 0
(9) Boy coolies, etc.	12	20			19 5 0
(10) Melters	24	35			33 14 0

All the labourers are employed directly by the concern, there being no contract labour. All the rates are on a time basis. But, according to the employers, each group of skilled workers (blowers, etc.) are set a particular task per day, say, turning out 3 gross of bottles. If their output exceeds the quota, they are paid proportionately higher wages. Or, alternately, they can leave the factory before time if they complete their work earlier. As the payment of extra wages for higher output is not recorded in the pay-rolls, it must be presumed that workers completing their task earlier prefer leisure to a little more money. Wages are paid once a month, the date of payment being the 7th of the subsequent month. Advances are given once a week to women and coolies, and once a fortnight to the skilled workers up to half the wages earned, and these are deducted at the end when the wages are paid. There are no other deductions. There appear to be very few cases of fines here and there. At present there is no system of deducting from wages for late attendance, etc.; if a worker is habitually late or inefficient, he is simply sent out. As the concern has been started only recently, they have not introduced any dearness allowance and the wage-rates are supposed to be sufficiently high for war conditions. The management contemplates the payment of a bonus after one year's working, according to the profits of the concern. Overtime work, i.e., all work done beyond the regular working hours on any day, or work done on Sundays, is paid for at the same rate as ordinary work. The payment made for overtime work does not seem to be regularly recorded in any separate register, or on the workers' cards.

C.—Working Conditions.

There are two shifts : day, and night. The working hours for the day shift are, 8-30 a.m. to 12-30 p.m., and 1-30 p.m. to 6 p.m. : 8-1½ hours work, involving a spreadover of 9-1½ hours. The night shift begins at 6-30 p.m., and continues till 9 p.m., and after a period of rest for one hour, begins again at 10 p.m. and goes on till 2-30 a.m. No women are employed in the night shift. Wages paid for night and day shifts are the same, but the working hours for the night shift are only 7 and the spreadover 8 hours.

The factory is situated in a large open space surrounded by a compound wall, and the sheds are all without walls. Hence there is plenty of ventilation and natural light, and at nights electric light is used. While the floor area is ample, it appeared that in certain sections, particularly grinding, washing and cutting, there was a great deal of crowding. Sufficient attention does not also seem to have been paid to order and neatness in the factory, many things being left here and there in heaps, and a lot of broken glass littered over the floor. The management say that workers are provided with foot-wear as protection, but this was not noticed in the case of majority of the workers. Latrines and urinals are provided adequately to meet the requirements of the Factories Act. Two water-taps in the open are used by workers. Cool water is said to be supplied during summer. There are no bath-rooms. There are also no shelters for rest, or for taking tiffin, but the construction of these is proposed. At present, workers use the open space and the shade of trees in the compound for this purpose.

There is no dispensary; there is only a first-aid box. A doctor, paid by the firm, periodically visits the factory and is available for consultation. But there is no periodical medical examination of all workers. As the concern is very recent, no cases of "occupational diseases" have so far been observed. Canteens, creches, schools for adults and children, are all absent. There is no grain shop either, but the management helps the workers in obtaining ration-cards for kerosene and rice.

D.—Housing.

The management has taken a house for rent for Rs. 40 and has provided in it residential facilities for the skilled staff recruited from outside. No rent is collected from these workers. The management attach great value to the provision of residential facilities for outside labour. The construction for residential quarters for these workers, though contemplated, could not be carried out because of lack of cement. Most of the unskilled workers, men and women come from the neighbourhood and there are large groups of workers' sheds in the vicinity. Some of these are owned and have been constructed by the workers themselves on land leased for a nominal rent. These sheds are small in size, built of mud-walls, with thatched roofing, mostly in coconut groves. These workers' colonies are decidedly more healthy than the city slums.

II.—BANGALORE.

The Bangalore factory (Mysore Glass and Enamel Works) was constructed in 1938 and began functioning in 1939. Planned and constructed on up-to-date lines it is located in the outskirts of Bangalore City, easily accessible by road, and within half a mile of the railway station of Yeshwantpur on the Mysore Railways. Coal was till recently used for the furnace, but due to its shortage, irregular supplies and poor quality, the factory had to be closed for nearly seven months from 26th August to December 1944. During this period, the furnace was reconstructed so as to use producer-gas from charcoal and coconut-shell. The factory has two furnaces each of which will be used alternatively, the average life of the furnace being about a year. The spare furnace which is now idle is being refitted and equipped for the use of gas. Electricity

is purchased from the local supply corporation. The furnace is a pot furnace, which is convenient for a medium supply plant producing different varieties of glass, because different pots could be used for different varieties and pots could be charged in sequence, so that molten glass is available continually to the blowers. The concern has developed its own machinery operated by hand for machine-blowing of bottles, jars, tumblers, etc., and for the making of necks. For the making of things like chimneys which have to be open at both ends, mouth-blowing is more common. A small machine shop is organized for making and repairing these machines.

A.—Employment.

The average daily number of workers employed in the factory was 277 in January 1944 and 331 in November 1944. All workers are employed directly on time wages. There are no clear records of service. Roughly speaking, it may be stated that 40 per cent. of the workers are people with less than one year's experience, while 60 per cent. have put in service of between one and five years or more in this concern. Some might have had more experience in sister concerns managed by the same Managing Agents elsewhere.

Workers are classified as "permanent", "temporary" and "casual". The standing orders define "permanent" workers as those confirmed by the Superintendent, given permanent tickets, and entered on the muster roll of permanent employees. In practice, workers are taken on trial on daily wages, kept temporary for 4 or 5 months, and if they stick to the concern and prove satisfactory, made permanent on a monthly salary. The distinction between permanent and temporary workers, thus turns out to be one between monthly and daily paid people. Out of 332 persons on the rolls at present, 164 are permanent and 168 temporary, which shows roughly 50 per cent. in each category. Permanent workers are entitled ordinarily to 14 days' notice for termination of service, and they have also to give similar notice; they enjoy weekly holidays (Sundays) and 27 half-holidays for festivals, etc., as paid holidays. They are entitled to Provident Fund, if they put in three years' service when the fund is started. Temporary workers are entitled only to three days' notice and they do not get any holidays with pay and are not entitled to contribute to the Provident Fund. A few people are taken as apprentices without pay, but on a nominal allowance. On completion of training they may be absorbed either in the concern or any one of the sister concerns. The number of apprentices thus trained and absorbed either here or elsewhere in the last five years is about 50. There is no system of graded or time-scale promotion. Increments and promotions are given according to efficiency at the discretion of the management. In fact, during the last five years, everyone has been getting an increment every year.

Turnover.—The following figures show the extent of labour turnover in the concern :—

TABLE 36.
Labour Turnover.

Month	Average daily number of workers employed during the month.	Permanent		Total No. of workers who left during the month.		Total.	%
		Dismissal	Voluntary	Dismissal	Voluntary.		
1944							
January	277	2	4	5	1	12	4.3
February	277	1	9	2	9	21	7.5
March	277	5	14	10	1	30	10.0
April	277	17	4	24	—	45	16.0
May	277	5	22	2	—	29	10.7

The percentage turnover in the above months varied from 4.3 to 16. But the high figures of turnover during March, April and May were due to a number of workers being sent out due to increasing coal shortage, and others being transferred to sister concerns. Under normal circumstances, it can be taken that the January 1944 figure of about 4.5 per cent. was representative.

The causes of turnover are several. Dismissals are due mainly to long absence without leave, long sickness, and stray cases of indiscipline, and theft. Removal for long absence and due being "played off", i.e., alternately lack of work, were particularly numerous in April 1944. Cases of voluntary termination of services were due to leaving the concern with notice, transfer of services to other concerns, or maternity. One of the reasons for turnover in this area is the attractiveness of employment in military works and in textile mills in the area, where wages up to Rs. 1-4-0 a day plus dearness allowance upto Rs. 15 per month are paid. These lead to absenteeism in the first instance and turnover in the end.

Absenteeism.—The total number of possible working days was 10,342, in January 1944 and 9,222 in February 1944; days lost by absence were 1,074 and 953 in these two months respectively. The percentage of absenteeism thus works out at 9.6 and 9.7 in these two months respectively. The causes of absenteeism are sickness and other domestic contingencies; attraction of higher wages under contractors in military works; and high earnings in workers' families due to higher wages, allowances, and better employment in war-time as compared to normal times. It was stated that many workers' families were earning up to Rs. 100, a month while their expenditure was limited by rationing and price control of essential articles. They were, therefore, in a position to save, or take more leisure. Many steps are taken in this concern to discourage absenteeism. Absence without leave is penalised; regularity of attendance is made a condition for the payment of bonuses; a separate allowance is given for those who are regular in attendance.

Recruitment of Labour.—All labour is recruited directly without the intervention of any middlemen. The Works Manager interviews every worker personally before employment. A part of the skilled labour is obtained from Ogalewadi paying them 25 per cent. more than what they get there and also travelling expenses to and fro. About 20 per cent. of the skilled labour comes from outside.

Relations between employers and labourers.—These are governed by the standing orders framed under the Mysore Labour Act, which deal clearly with all matters like classification, shifts, attendance, and late coming, leave, holidays, punishments, disciplinary act, termination of employment, wages, etc. There is no separate Labour Officer. But there is a Labour Association formed under the above Act, which is expected to function as a channel for representation of workers' interests. In this particular case, the elected President, of the Labour Association happens to be the Works Manager himself. In addition, there is a Works Advisory Committee, with the Managing Agent as the President and fifteen members—one being an outsider, a member of the public interested in labour welfare—and half the remaining members from the management and the workers respectively. A meeting of this Committee is held once a week when all matters of common interest are freely discussed. This organization forms a link between the workers and employers and promotes cordial relations between them.

B.—Wages and Earnings.

The rates of wages are monthly for all permanent workers and daily for temporary workers. The rates of wages, and average monthly earnings for principal occupations are shown in the following table :—

TABLE 37.
Basic Wages and Total Earnings (January 1944).

Category.	Basic Wage Rate			Total Earnings		
	Average p. m.			(average).		
	Rs.	A.	P.	Rs.	A.	P.
Foremen	46	0	0	64	9	7
Firemen	37	0	0	46	0	0
Machine Operators	36	4	0	43	12	0
Mouth Blowers	53	5	4	72	0	0
Bubblers	11	0	0	21	13	4
Helpers or Carriers	7	10	0	19	6	0
Screeners, Grinders, etc. (women)	9	12	6	18	4	0
Stitchers, wrappers, etc.	14	4	0	28	7	6
Dippers	12	15	8	22	2	0
Picklers	10	7	9	20	7	9

As can be seen from the table, while the basic wage-rates are comparatively low, as they have remained unaltered since 1939, the average earnings are much higher due to the payment of dearness efficiency and other allowances. Wages are paid once a month, in the second week of the subsequent month, usually on the second Saturday. Dearness allowance is paid a week later. No advances are given as a matter of course during the month, but as loans in stray cases to be recovered in small instalments.

Dearness allowance is paid at the following rates :—

- (i) Rs. 7-8-0 p.m. to those getting upto Rs. 25.
- (ii) Rs. 10-0-0 p.m. to those drawing between Rs. 25 & 50.
- (iii) Rs. 12-8-0 p.m. to those drawing between Rs. 50 & 100.
- (iv) 10 per cent. of the salary for those drawing Rs. 100 and more.

An efficiency allowance is given at the end of each month according to the discretion of the management up to Rs. 10 per mensem; and special allowances are given for cases of hard work or strain. In attendance allowance of Re. 1 per month is given to all those who attend regularly throughout the month and drawing a salary less than Rs. 15 per month. A bonus is paid at the end of the year; it was paid at the rate of a month's salary during 1941-42 and a salary of 1-1/2 months during 1942-43. Half of the bonus for the latter year was given in the shape of standard cloth, to prevent its dissipation in drink, etc. A special bonus is also paid to those who attend regularly throughout the year. Regularity of attendance is insisted upon as a condition for most of these allowances and bonuses. Absence without permission entails loss of the attendance allowances as well as a cut in dearness allowance in proportion to the number of working days absent.

Work in excess of the scheduled hours and work on Sunday, except where a substitute holiday is given, is treated as overtime and paid at 1-1/4 times the normal rates. Overtime is recorded in the workers card, the muster roll, as well as in separate overtime Register and is available for inspection. Overtime is not compulsory but is usually insisted upon in practice.

Late attendance above five minutes is recorded in the card and totalled up at the end of the month; 1-1/4 times the normal wages is deducted for this period. For absence without leave also, 1-1/4 times the wages is deducted. The only other deductions are small fines. No separate fund, however, is maintained for these.

C.—Working Conditions.

There are two shifts : day and night. The factory works from 8-30 a.m. to 12-30 p.m. and from 2 p.m. to 6-30 p.m., 12-30 p.m. to 2 p.m. being the lunch interval. There is a rest interval of 20 minutes in each of the sessions, viz., 10-40 to 11 a.m. and 3-10 to 3-30 p.m. to provide relaxation

because blowing involves team-work of a continuous and strenuous nature. During night again the working hours are arranged similarly, 8-30 to 12-30 p.m. and 2 to 6-30 a.m. with similar rest intervals. The spreadover, in each case, is 10 hours. The night shift comprises work only for the furnace and blowing sections, about 20 people being engaged on it.

The factory is constructed on modern lines, is well ventilated and provides ample floor space. The different sections are housed in different buildings, all connected by good roads and surrounded by a beautiful garden. The roofing is high in every building and ample natural and artificial lighting is provided. Particular care is taken to preserve cleanliness and orderliness everywhere.

D.—Welfare Activities.

Great emphasis has been laid on welfare since the inception of the concern ; and it can be safely said that the measures taken are extremely satisfactory for a medium-sized concern like this. Separate latrines are provided near the residential quarters for men and women : three scavengers are employed to keep them clean. Two bore-wells, a well with pump, and two taps of filtered water are available in the compound. A dispensary with a full-time paid compounder and a stock of medicines is maintained, and a part-time Doctor visits once a week and provides advice for the workers and their families. The system of medicine followed is allopathic. A canteen is run by a caterer who is provided with a clean neat building, and the utensils and provisions needed. Meals, coffee, tea and light refreshments are provided. About 25 workers take their meals there while a large number take coffee, tiffin, etc. No caste restrictions are observed. The charges are moderate and are equal to those elsewhere in the city. A very high standard of cleanliness is maintained. The caterer pays only a nominal rent to the works. The activities of the canteen are to be expanded when more milk and provisions are available. The provision of a creche is contemplated. A school building is provided and a primary school is run for the benefit of the children of residential workers, the salary of the teacher being paid by the concern. Literacy classes are run at night for the benefit of adult workers. A grain shop is run, started two years ago. It sells fine and coarse rice, *cholam*, *ragi* and other food stuffs, and cheap cloth. Shelters for rest during intervals and places for parking cycles are also provided. The management are also contemplating the provision of a cooling beverage like barley water or butter milk to those who work near the furnace.

E.—Housing.

Residential quarters are provided for the essential services in the concern for nearly sixty families. As these people have to be available all the time near the works and as they are also outsiders some of whom are untouchables from other areas, provision of housing is considered absolutely necessary. The houses provided are of three types mainly :—

A Type—four rooms with a total area of 780 sq.ft. provided with electric lights and water. Rent Rs. 3-8-0 p.m.

B Type—Two rooms with a total area of 300 sq. ft. with lights. Rent Rs. 1-12-0 per mensem.

C Type—One room with an area of 200 sq. ft. with a verandah with lights. Rent Rs. 1-4-0 p.m.

The rents charged are nominal. The Company contemplates the extension of the housing scheme as soon as possible, so as to accommodate at least 50 per cent. of its workers. The present housing scheme has cost them Rs. 46,000. The other workers, most of them local, drawn from the city or neighbouring villages two or three miles off, live in rented houses or in own houses. Details regarding their housing conditions are not known.

F.—Factory Legislation.

The Mysore Factories Act, the Mysore Workmen's Compensation Act, the Mysore Maternity Benefit Act, and other Acts are in force here and their provisions are satisfactorily observed. Inspection by the Inspector of Factories does not appear to be very frequent here. Only two remarks are found in the remarks book, one of which pointed out a flaw in the manner of getting boys certified by the Doctor; the flaw was rectified. The other was a suggestion to the effect that flush-out latrines and two urinals may be constructed. The Inspector also expresses satisfaction at the clean and neat maintenance of the factory. There have been no accidents or cases of compensation. Under the Maternity Benefit Act in six cases two months' wages were paid ranging from Rs. 16 upto Rs. 18 in each case, in 1943. In 1944, four cases were paid benefit. The Act has not so far discouraged the employment of women.

G.—Indebtedness.

Workers are not indebted to any substantial extent. Many of them are earning well, almost all the members in the family being employed and getting high wages. A family's monthly income may go up to Rs. 100 while its expenditure on essentials has been kept down by rationing and price control. Hence many of them makes savings which are utilized for buying small property or paying off ancestral debts. Current debts are small, mostly advances up to Rs. 50 from the company to be repaid in small instalments without any interest. There is no evidence of indebtedness to outside agencies. Recently a Co-operative Society has been formed to meet the needs of workers in this direction.

H.—Provident Fund.

There was a Provident Fund formerly but it had to be closed when the works was closed due to coal shortage. It is proposed to revive it, those of the workers who have put in more than three years' service being eligible and paying 1 anna in the rupee from their wages and the management making a similar contribution.

From every point of view, technical as well as organizational, the factory is well-planned and efficiently organized. The records and registers are kept in a very satisfactory condition. Labour conditions here appear to be highly satisfactory. Relations between workers and employers are very cordial, while discipline is well maintained. Having attained a very high standard of quality in production, the concern is confident of working satisfactorily in competition with foreign competition after the War and of maintaining its present level of employment. But the management feel that it is Government's duty to see that the prosperity of the industry is not hampered by factors like unfavourable railway rates. While they are in general very sympathetic towards progressive labour legislation and social security measures, they feel that these should not raise their cost of production relative to that of foreign competitors; in case they do, they point out that adequate protection will have to be given.

CHAPTER VIII.—SUMMARY AND CONCLUSIONS

The beginnings of the modern glass industry in India date back to the first decade of the twentieth century and it received a great impetus in the World War I, when the cessation of imports from the western countries led to the establishment of a number of factories in the country. The technical personnel to man the new works was provided by the Paisa Fund Glass Works of Telegaon.—a public institution which trained young men as technologists, blowers, helpers, etc., with the help of foreign experts. These persons, equipped with technical knowledge and managerial experience promoted a number of flourishing concerns in other areas. The denial of protection to the industry

hit it pretty hard in the period intervening between the two wars when continental producers dumped their goods here, but the resilience of the industry enabled it to tide over its difficulties. The one branch of the industry which has always beaten the foreigner is the bangle manufacture at Firozabad. The value of glassware manufactured in India increased from Rs. 40 lakhs in 1919 to Rs. 120 lakhs in 1939. The World War II, has given a powerful fillip to the glass industry and while no accurate figures for current production are available, it may be said that the volume of production must have at least doubled since 1939. The imports, on the other hand, have dwindled from Rs. 1,25,12,000 in 1938-39 to Rs. 15,45,000 in 1943-44, while the total employment in British Indian glass factories has gone up from 8,934 in 1939 to 18,328 in 1943.

Employment.—The industry falls into three broad divisions according to the nature of goods produced, viz., (i) bangles, (ii) sheet glass and (iii) hollow-ware. The main types of workers in glass bangle factories are *tarwala* (thread-man), *belanwala* (roller-man), *lom bananewala* (parison-maker), *lom denewala* (parison carrier), *kataiya* (cutter) and *ginaiya* (counter). In the sheet-glass factory, besides technical hands like engineers, fitters, firemen, etc., there are bottom mechanists who work as helpers to machines drawing glass into sheet, and top machanists who take out the annealed sheets and pass them on to sheet-cutters. Sheet-cutters are the best-paid workers in the factory. In the hollow-ware factories the key place is occupied by blowers except in factories where the blowing process has been mechanized. The blowers are assisted by moulders, gauge-men and the line-men employed for the ancillary processes of holding the mould in position, carrying the blown-ware to the annealing chamber and arranging the ware in drums for annealing. There are, of course, some unskilled workers—men and women—for odd jobs like cullet sorting, packing, etc. In 1944, when our survey of labour conditions in the glass industry was conducted, there were 75 regulated factories in British India employing about 18,000 workers. Of these, we investigated 54 factories employing 10,682 workers in all. Besides this, 1,000 Firozabad (U.P.) cottage-shop workers, 1,453 employees of the Ogale Glass Works at Ogalewadi (Aundh State, Bombay), and 331 employees of the Mysore Glass and Enamel Works at Bangalore were also covered. Thus, the total number of workers covered in the whole of India was 13,466 out of an estimated total¹ of 28,000.

The industry presents an interesting panorama with *shishgars* manufacturing bangles and others making hollow-ware on small scale in the old traditional ways at one end, and huge glassware factories producing modern goods at the other. The operations of the former are governed by no law whatever. About 6,000 workers are employed in the Firozabad cottage shops alone, of which about 2,500 may be children of 6 to 10 years of age. The justification of the employment of children is sought in the "apprenticeship" argument, but one cannot be sure that the child apprentice working under the conditions prevailing in these shops, would live long enough to reap the fruits of his early training! The joining, cutting, enamelling and painting shops employ on an average 5 persons each. Workers are recruited usually from amongst the relatives of the employer, but skilled workers like painters have often to be recruited from outside the circle of relatives. In the cottage shops, due to strong personal ties between the workers and the employer, labour turnover is discouraged but due to the prevalence of the drink evil, absenteeism among the workers is high.

The bigger factories recruit workers directly or through paid agents. The problem of recruitment has been one of insuperable difficulties for the employers. Within the last 5 years, employment in the regulated glass factories in

¹See Appendix VII.

British India has gone up by 105 per cent. The number of workers in the Bombay and Bengal factories has gone up by 221 and 119 per cent. respectively since 1939. There has been virtually a scramble for skilled and semi-skilled workers who are recruited from areas hundreds of miles away from the factories. There has also been considerable turnover of labour among the factories *inter se* in places like Bombay, Calcutta, Firozabad (U.P.) and Amritsar (Punjab), brought about by the efforts of employers to entice away workers of other factories on the payment of advances and promise of better wages. A considerable amount of involuntary unemployment and turnover is caused by irregular supplies of coal and raw materials. This high turnover of labour is also reflected in the figures for the length of service of operatives. In factories established recently, the length of service of workers is naturally small but even in the leading concerns, established decades ago, 40 to 50 per cent. of the workers have less than a year's service to their credit.

Wages and Earnings.—The general wage level in the industry as a whole has gone up by 100 per cent. and more, although till 1942, wages did not show any appreciable increase. Only the wages of blowers began to rise from the first days of the present war and have gone up by 200 to 300 per cent. so far. Most of the concerns are paying consolidated wages but some have kept basic wages separate from incidental war-time dearness allowance. Blowers' wages in 1939 were about Rs. 45 p.m. Now they are earning about Rs. 100 p.m. Cases came to our notice where they had earned as much as Rs. 250 p.m. The earnings of blowers in factories equipped with semi-automatic blowing machines are about Rs. 60 p.m. These machines can be easily worked by the less skilled blowers. Helpers, neck-makers, firemen, etc., are earning Rs. 65 to 70 p.m., while before the war their average earnings per month seldom exceeded Rs. 30. Unskilled men were earning Rs. 10 to 12 in 1939 but at present they are getting Rs. 30 to Rs. 35 p.m. Similarly the average wages of women coolies have increased from Rs. 8 p.m. in 1939 to Rs. 24 p.m. in 1944. In the glass bangle factories at Firozabad, wages have increased by 150 to 200 per cent. The employers agreed with the local Mazdoor Sabha in 1939 to pay minimum wages to certain specified categories. These rates were further increased in 1943. The current rates of wages are, however, considerably above those laid down in the agreement. *Tarwalas* and *belanwalas* are the highest paid workers in these factories. The bigger firms are paying separate dearness allowances. Some of them have a flat rate while others have slabs or percentage rates. The Ganga Glass Works at Balawali (U.P.) pays dearness allowance of Rs. 15 p.m. to all their employees while the U.P. Glass Works at Bahjoi pays dearness allowance at As. 10 in the rupee. Some of the Bombay factories have not raised their *basic* wages and regard the difference between current and pre-war wages as dearness allowance. In the Punjab, basic wages have gone up considerably and a dearness allowance at As. 2 in the rupee is paid compulsorily. Usually regularity in attendance is insisted upon as a condition precedent to the payment of full allowance, and in case absence in the course of a month exceeds two or three days, a *pro rata* deduction is made. Overtime work in the bigger concerns is paid for at the rates prescribed in the Factories Act or at higher rates but in most of the smaller factories an hour's extra work is not reckoned. The period of wage payment in most of the factories is one month and wages are paid by the 7th of the month following. Glass factories in most Provinces have been exempted from the provisions of Section 35 (Weekly Holidays) of the Factories Act on technical grounds. The factories have, however, been obliged to grant a 24 hours' holiday to every worker after not more than 14 days' continuous work. In a number of concerns this proviso was being disregarded. The daily rated workers do not get any paid holidays except in a few concerns. Thus, in the U.P., only in 3 out

of 27 factories surveyed are paid holidays given to workers, but even in these the piece-rated workers do not get paid holidays. No complaints regarding delay in the payment of wages were made.

Conditions are different in the cottage shops. Cutters, painters, etc., are piece-rate workers, though sometimes after estimating the monthly output, cutters are put on monthly salaries. Men are earning Rs. 30 to 45 p.m. while children earn As. 12 to Rs. 1-8-0 per day. Rates of wages paid to children are not low from an absolute standpoint though the earnings of adults are considerably higher. No registers are maintained for keeping attendance or payment records for no law obliges them to do so. The workers do not get any holidays as the shops are open throughout the month.

Working Conditions.—Majority of the factories are working 3 eight-hour shifts (12 midnight to 8 a.m.; 8 a.m. to 4 p.m.; and 4 p.m. to 12 midnight) for furnace workers and blowers, and one general shift (8 a.m. to 7 p.m. with an hour's rest between 1 p.m. and 2 p.m.) for the office staff and unskilled coolies. Overlapping shifts are not worked anywhere. Conditions of lighting and ventilation were found to be satisfactory in the blowing sheds of the factories, but the mixing rooms were found to be deplorably ill-ventilated and ill-lighted. The atmosphere was laden with the dust of silica and other chemicals and yet the workers working therein had not been provided with either dust-respirators or goggles. It was alleged that a number of mixers had contracted lung diseases of the nature of silicosis. In the bigger establishments, floor area per worker was adequate but one felt that for the nature of operations carried on therein, *viz.*, moving and swinging blow-pipes with molten glass at one end, the space per worker should have been greater. In the smaller works, the floor area was definitely inadequate with the result that a number of burns were caused, which were not always due to the carelessness of the workers. Broken pieces of glass were scattered all over the area causing cuts to the workers, who, in most of the concerns, walked about bare-footed. The glass factories are very hot all the year round and intolerably so in summer, because of the furnaces burning for all the 24 hours. Blowers and helpers, moulders and linemen, all work in front of furnaces. In the sheet-glass factory, workers employed at the top and bottom machines, sometimes faint while on duty. But the conditions in this regard are very much worse in the glass bangle factories and *bhattas* of *shishgars*. There the *tarwala* and *belanwala* have to work continuously, without even a moment's respite, in front of the furnaces. They often faint at their post. In the cottage shops, wherein over 40 per cent. of the total employment is child labour, conditions are still worse. These shops know neither lighting nor ventilation. The joining shops, in order to bar a direct draught of air, close all the doors and shut out fresh air completely. The result is that small children of between 6 and 10 years work in smoky atmosphere for long hours. It is not surprising, therefore, that they become emaciated, anaemic and rickety. Their eyesight is jeopardized in early childhood. There are no scheduled hours of work and each employer follows his individual programme. In spite of all this, the Employment of Children Act, extended in 1939 to a number of industries, has not yet been made applicable to these shops.

Welfare Activities.—Distinction has to be made between welfare activities in the bigger establishments and those in the smaller ones. In the former, at least the obligatory welfare activities are honestly undertaken. The Scientific and Industrial Glass Co. of Calcutta has a dispensary of its own under the charge of a qualified Doctor. It runs a canteen also, supplying the noon meal free of cost and other eatables at market rates. There are canteens in two

other factories also. Out of the 17 factories surveyed in Bengal, 5 had dispensaries of their own and 4 had made arrangements with local private practitioners paying them small allowances. In the U.P., only the three leading concerns had made any arrangements for medical aid. They were, however, very inadequate. In a big centre like Mirozabad, the employers had made no arrangements for medical aid whatever. In one of the Bompay factories, there was a canteen which provided meals and tea at 25 per cent. below market rates. There were no creches in any of the factories surveyed, although in some of them over 100 women were employed. In some places, grain shops managed by private contractors supply food stuffs to workers both on cash and credit. But their accounts are rarely checked by the management, and it may be that the worker is sometimes cheated. No special steps have been taken to safeguard the worker against the intolerable heat of the glass factory. Only in Bangalore, where welfare amenities appeared to be of a high order are the management considering the provision of free cool drinks. The employers have made no arrangements worth the name in any of the Provinces for the education of their adult employees or the children of the employees.

Housing.—About 26 per cent of the total number of workers employed in the glass factories surveyed were housed by the employers. In the United Provinces, at the Ganga Glass Works, Balawali, about 250 workers out of a total of 729 were housed free of rent. But in other U.P. centres housing accommodation wherever provided was charged for. In Bengal, all the 762 workers housed did not have to pay for their lodging. In Bombay, only one factory housing 300 workers charged rent at Rs. 3 to Rs. 4 per month. Types of houses vary from centre to centre and even in the same centre. As a rule technical hands are given the better type. Their quarters are usually *pucca* built, with a couple of rooms, a kitchen, a bath-room and a court-yard. Accommodation provided to semi-skilled and unskilled workers consists of single room tenements built in line with or without verandah in the front. Rents charged to these workers are nominal in all the centres. Sanitary arrangements for the inferior types of quarters were found to be inadequate in all places and deplorable in some. There was no congestion in quarters provided by factories situated in villages. But in quarters in big towns we found considerable congestion. White-washing is done very seldom. The rooms are generally 10 ft. × 8 ft. in size and there is hardly any arrangement for ventilation.

Working of the Various Acts.—The Factories Act applies to all glass factories using power and having more than 20 employees. In some Provinces it has been extended to factories employing 10 or more workers. It was found that some of the provisions of the Act, especially in regard to working hours, holidays, safety and health, were not being fully observed. Children were being employed in some of the regulated factories. Although the Workmen's Compensation Act applies to all the factories, most of the accidents go unpaid for and there is a facile contravention of the provisions of the Act. The "waiting period" of 7 days saves the employers in most cases, as the commonest injuries, *viz.*, cuts and burns, get healed up within less than the "waiting period". The employer is not obliged even to pay wages for the duration of enforced unemployment. Even in factories employing over one hundred women workers, no case came to our notice where maternity benefit had been paid. All this has to be predicated with the remark that the factory inspectorate is everywhere too inadequate to the task set for it.

Miscellaneous.—Because of the *de facto* seasonal nature of the industry and the consequent intermittent periods of unemployment, the glass factory workers have not been able to organize themselves into strong unions. In

Firozabad, in the United Provinces, there is a Mazdoor Sabha which claims a strength of 2,000, but it does not have much of a hold over the workers. In Calcutta, there is a Calcutta Glass Works Union, which has a membership of only 327. Similarly, in Bombay, there are two Unions but both of them seem to be comparatively inactive. Glass factory workers were indebted nearly in *all* the centres investigated. They are given to the drink evil and at some places to gambling also. It is not surprising, therefore, that they have to go in for borrowing often. In some centres, there are cinemas and roulettes which depend almost entirely for their income on glass workers. At one place, leading money-lenders of the town were the proprietors of the factories themselves.

To sum up, the glass industry is still unfortunately one of those where serious evils prevail in spite of factory laws and in the cottage industry, which should have a cleaner record, conditions of labour seem to be actually worse. Prevalence of child labour in contravention of the law in the case of the regulated factories, and otherwise in that of cottage shops, deserves immediate and particular attention.

SIMLA ;

B. P. ADARKAR.

15th June, 1945.

APPENDIX I.

Wages and Earnings of Workers in a Leading Glass Factory in U. P.

Occupation.	1939		1945		Increase %			
	Basic Wages and Earnings.		Basic Wages.	Gross Earnings.	Average Basic Wages.	Average Gross Earnings.		
	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.		
Blowers—								
M1	37	0 0	100	0 0	115	0 0	38.5	84
M2	30	0 0	22	0 0	47	0 0		
A	33	0 0	45	11 6	60	11 6		
Helpers—								
M1	22	0 0	36	0 0	51	0 0	30.7	98.8
M2	22	0 0	25	0 0	40	0 0		
A	22	0 0	28	12 0	43	12 0		
Bubble-makers—								
M1	15	0 0	22	0 0	37	0 0	32.4	143.5
M2	12	0 0	15	0 0	30	0 0		
A	13	6 0	17	12 4	32	12 4		
Carriers and Moulders—								
M1	9	8 0	15	8 0	30	8 0	59.5	233.4
M2	8	0 0	13	0 0	28	0 0		
A	8	10 0	13	12 3	28	12 3		
Mixers—								
M1	15	0 0	26	0 0	41	0 0	31.7	153.3
M2	10	0 0	13	0 0	28	0 0		
A	12	5 4	16	4 0	31	4 0		
Firemen—								
M1	25	0 0	32	0 0	47	0 0	84.3	130.7
M2	14	0 0	27	0 0	38	0 0		
A	18	4 7	27	2 0	42	2 0		
Lehr Unholders—								
M1	12	0 0	20	0 0	35	0 0	35.7	167.3
M2	10	0 0	14	0 0	29	0 0		
A	11	8 0	15	11 8	30	11 8		
Coalmen—								
M1	10	0 0	15	0 0	30	0 0	55.2	213.1
M2	9	0 0	14	8 0	29	8 0		
A	9	8 0	14	12 0	29	12 0		
Cutters, Wrappers, Packers, Grinders—								
M1	14	8 0	19	8 0	34	8 0	44.9	79.3
M2	6	0 0	13	0 0	28	0 0		
A	9	14 5	14	5 0	29	5 0		
Carpenters—								
M1	20	0 0	45	0 0	60	0 0	123	238.4
M2	8	8 0	17	0 0	32	0 0		
A	13	0 0	29	0 0	44	0 0		
Machinemen—								
M1			70	0 0	85	0 0		
M2			15	0 0	30	0 0		
A			44	0 0	59	8 0		
Potters—								
M1	35	0 0	60	0 0	75	0 0	64.9	126.8
M2	13	8 0	21	0 0	36	0 0		
A	24	4 0	40	0 0	55	0 0		

M1—Maximum. M2—Minimum. A—Average.

APPENDIX II.

Daily Wages and Earnings of Workers in a Sheet Glass Factory (Sheet Glass Sections).

Occupation.	1939.		1942.			1945.		
	Basic Wages.		Basic Wages.	Gross Earnings.		Basic Wages.	Gross Earnings.	
	R.	A. P.	Rs.	A.	P.	Rs.	A.	P.
Mixers—								
M1	0	4 9	0	6 9	0	8 5	0	10 6
M2	0	4 6	0	5 0	0	6 3	0	9 3
A	0	4 7	0	5 7½	0	7 ½	0	10 1
Firemen—								
M1	0	6 9	0	8 0	0	10 0	0	14 0
M2	0	5 3	0	7 0	0	8 9	0	13 0
A	0	5 6	0	7 3	0	8 10	0	14 0
Helpers—								
M1	0	5 0	0	6 3	0	7 10	0	13 0
M2	0	4 3	0	5 3	0	6 7	0	9 3
A	0	4 10	0	5 10½	0	7 4	0	11 7½
Batchfeeders—								
M1	0	6 0	0	6 6	0	8 1½	0	11 3
M2	0	5 0	0	5 6	0	6 10½	0	10 0
A	0	5 5	0	6 0	0	7 6	0	10 7½
Bottom Mechanists—								
M1	0	8 6	0	9 9	0	12 2	1	6 0
M2	0	4 9	0	4 9	0	5 11	0	8 0
A	0	5 10	0	6 4½	0	7 11½	0	11 6
Top Machinists—								
M1	0	7 0	0	7 0	0	8 9	0	12 3
M2	0	6 6	0	5 6	0	6 10½	0	10 6
A	0	6 9	0	6 5	0	8 0	0	11 5
Liftmen—								
M1	0	5 6	0	6 3	0	7 10	0	11 0
M2	0	4 9	0	4 6	0	5 7½	0	10 0
A	0	5 2	0	5 7	0	7 0	0	10 5
Sheet Cutters—								
M1	1	4 6	1	4 9	1	9 11	2	13 3
M2	0	13 6	0	11 6	0	14 4½	2	0 6
A	1	1 7	0	15 6	1	3 4½	2	3 10½
Sheet Carriers—								
M1	0	4 6	0	5 6	0	6 10½	0	10 0
M2	0	4 0	0	5 0	0	6 3	0	9 0
A	0	4 3½	0	5 3½	0	6 7½	0	9 8½
Cullet carriers—								
M1	0	4 6	0	5 9	0	7 2	0	10 6
M2	0	4 6	0	5 0	0	6 3	0	8 0
A	0	4 6	0	5 5	0	6 9	0	8 10½
Packers—								
M1	0	6 0	0	7 0	0	8 9	0	12 6
M2	0	6 0	0	5 6	0	6 10½	0	11 0
A	0	6 0	0	6 1	0	7 7	0	11 7
Wrappers—								
M1	0	3 6	0	4 9	0	5 11	0	9 9
M2	0	3 0	0	3 6	0	4 4½	0	7 6
A	0	3 3	0	4 1	0	5 1	0	8 2
Carpenters—								
M1	0	11 0	0	8 6	0	10 7½	3	0 1½
M2	0	8 0	0	6 9	0	8 5	2	9 3
A	0	9 8	0	7 8	0	9 7	2	12 5
Porters—								
M1	0	6 0	0	6 9	0	8 5	0	12 9
M2	0	4 6	0	5 6	0	6 10½	0	10 6
A	0	5 1½	0	5 11	0	7 5	0	11 1½

M1—Maximum. M2—Minimum. A—Average.

APPENDIX III.

Average Daily Wages and Earnings of Workers in the same Sheet Glass Factory (Boiler, Power House, Blacksmithy, Workshop and Paper Section).

Occupation.	1939.			1942.			1945.		
	Basic Wages.			Basic Wages.			Gross Earnings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
<i>Boiler.</i>									
Firemen	0	6	0	0	7	0	0	8	9
Asstt. Firemen	0	4	6	0	6	0	0	7	6
Cleaner	0	4	0	0	5	6	0	6	10½
<i>Power House.</i>									
Driver	21	0	0	0	12	0	0	15	0
Oilmen	0	4	6	0	5	6	0	6	10½
<i>Blacksmithy.</i>									
Blacksmith	30	0	0	0	15	3	1	3	1
Hammerman	0	6	0	0	6	9	0	8	5
Asstt. Hammerman	0	5	0	0	5	6	0	6	10½
<i>Workshop.</i>									
Turners	42	0	0	1	4	0	1	9	0
Fitters	30	0	0	1	2	0	1	6	6
Cleaners	0	4	6	0	5	6	0	6	10½
Electrician in charge	50	0	0	2	0	0	2	8	0
Asstt. Electrician .. ..	..	..	..	..	..	..	3	10	0
Wiremen	14	0	0	0	7	3	0	9	1
Carpenters	30	0	0	1	0	0	1	4	0
<i>Paper.</i>									
Choppers .. ..	..	..	..	0	4	6	0	5	7½
Lifters .. ..	..	..	..	0	4	6	0	5	7½
Drivers .. ..	..	..	..	0	4	6	0	5	7½

APPENDIX IV.

Particulars of Rates of Wages paid to the Workers in a Leading Factory
(Bombay).

Categories.	Previous to 1st June, 1943.			From 1st June 1943 to 31st Dec. 1943.			From 1st January, 1944 to 30-9-44.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
<i>Blowing Department.</i>									
Supervisors	60	0	0	75	0	0	100	0	0*
Munshies	40	0	0	50	0	0	60	0	0*
Blowers	52	0	0	65	0	0	78	0	0*
Helpers	40	0	0	50	0	0	60	0	0
.. .. .	45	0	0	56	4	0	67	8	0
Cutters	35	0	0	43	12	0	52	8	0
.. .. .	40	0	0	50	0	0	60	0	0
Rulsa	35	0	0	43	12	0	52	8	0
Soda Rulsa	40	0	0	50	0	0	60	0	0
Airman	33	0	0	41	4	0	49	8	0
Jamadar (Fireman)* ..	40	0	0	50	0	0	60	0	0
Coolies	24	0	0	31	8	0	37	12	0
Fitters	23	0	0	30	8	0	36	9	0
Mistri (Fitter Head) ..	22	0	0	29	8	0	35	6	0
.. .. .	48	0	0	60	0	0	75	0	0
.. .. .	..	..	..	75	0	0	100	0	0
.. .. .	40	0	0	50	0	0	65	0	0
<i>Packing Department.</i>									
Supervisor	85	0	0	100	0	0	150	0	0*
Munshi	36	0	0	45	0	0	54	0	0†
Munshi .. .. .	..	..	..	35	0	0	42	0	0†
Muccadam	40	0	0	50	0	0	60	0	0
Men (per day)	1	4	0	1	8	3	1	13	0
Women	0	10	0	0	15	3	1	2	3
<i>Mixing Department.</i>									
Munshi	36	0	0	45	0	0	54	0	0†
Men (per day)	0	14	0	1	2	0	1	5	6
.. .. .	0	12	0	1	0	6	1	3	9
<i>Broken Department.</i>									
Munshi	44	0	0	55	0	0	75	0	0*
Men (per day)	0	14	0	1	2	0	1	5	6
.. .. .	0	12	0	1	0	6	1	3	9
Women	0	10	0	0	15	3	1	2	3
<i>Sorting Department.</i>									
Supervisor	44	0	0	55	0	0	75	0	0†
Munshi	32	0	0	40	0	0	48	0	0†
Men (per day)	0	11	0	1	0	6	1	3	9
Women	0	10	0	0	15	3	1	2	3
<i>Grinding Department.</i>									
Munshi	44	0	0	55	0	0	70	0	0*
Men (per day)	0	12	0	1	0	6	1	3	9
Women	0	10	0	0	15	3	1	2	3
<i>Mechanic Department.</i>									
Mistri	55	0	0	75	0	0	100	0	0*
Turner	90	0	0	120	0	0	150	0	0
.. .. .	..	..	..	85	0	0	130	0	0
.. (per day)	3	0	0	3	8	0	4	3	0
Engraver	45	0	0	60	0	0	80	0	0
Fitter (per day)	1	12	0	2	4	0	2	11	0
Cooly	0	14	0	1	2	0	1	5	6

Categories.	Previous to 1st June, June, 1943	From 1st June 1943 to 31st Dec. 1943.	From 1st January 1944 to 30.9.44.
<i>Power House Department.</i>			
Electrician	90 0 0	100 0 0	150 0 0
Fitters (per day)	2 8 0	3 0 0	3 9 0
” ”	1 0 0	1 4 0	1 8 0
<i>Blacksmith Department.</i>			
Mistri	70 0 0	90 0 0	108 0 0
Blacksmiths	40 0 0	60 0 0	72 0 0
” .. .. .	..	..	60 0 0
			50 0 0
<i>Tube Blowing Department.</i>			
Blowers .. .. .	..	..	100 0 0
” .. .. .	..	70 0 0	84 0 0
” .. .. .	..	..	75 0 0
” .. .. .	..	..	65 0 0
” .. .. .	..	..	60 0 0
Helpers .. .. .	..	..	60 0 0
Bublers	28 0 0	35 0 0	42 0 0
Coolies	22 0 0	29 8 0	35 6 0
<i>Carpenter Department.</i>			
Mistri	84 0 0	105 0 0	126 0 0*
Carpenters (per day)	2 12 0	3 6 0	4 4 0
”	3 7 0	4 4 0	5 0 9
”	2 3 0	2 12 0	3 4 3

*Are provided quarters only (fee).

†Are provided Lodging & Boarding (fee).

N.B.—(a) No dearness allowance was paid to workers but 57 per cent. fixed increment was paid upto 31st May 1943 and over and above an increment of 25 per cent. to 40 per cent. respectively was paid from 1st June 1943 to 31st December 1943 and further additional increment of 20 per cent. was paid from 1st January 1944.

(b) An extra monthly bonus on “Standard Production” is paid to the workers according to the efficiency made by each worker. The average amount of bonus per individual worker comes to Rs. 10 to Rs. 30 for Blowers and Helpers; Rs. 10 to Rs. 30 for Rulsawala; Rs. 20 to Rs. 35 for Cutters; Rs. 5 to Rs. 10 for Airman; and Rs. 2 to Rs. 5 for Coolies.

(c) Free quarters are provided nearly to all the workers of Blowing Department, including the supervisors and munshis, and in addition to this allowance the munshis of other departments are given free boarding. Further, nearly all the Blowers, Cutters, Helpers, Rulsawala and Coolies (imported from upcountry) are paid for fuel and kerosene oil.

(d) The total amount of bonus (Rs. 8,500) was paid in the year 1943 to those workers whose services completed for 8 months and over at the rate of 12-1/2 per cent. of the total earnings of 12 months during the year 1942-43.

(e) The total amount of bonus (Rs. 32,518|1/3) was paid to those workers whose services were for six months and over were in Company's services at the time of payment of bonus at the rate of 12-1/2 per cent. of the total yearly earnings as bonus in the year 1944 for 1943-44. An extra bonus of 5 per cent. was paid in addition to the above who had received the previous bonus for 1942-43.

APPENDIX V.

Wages and Earnings in Glass Factories (Bombay Province).

Name of Occupation.	G. 1.		G. 2.					G. 3.				G. 4.					G. 6.			G. 7.					
	Gross Earnings		Basic Wages			Gross Earnings		Basic Wages		Gross Earnings		Basic Wages		Gross Earnings			Gross Earnings			Basic Wages			Gross Earnings		
	Max.	Min.	Max	Min	Av.	Max.	Min	Av.	Max.	Min.	Max.	Min.	Max.	Min.	Av.	Max	Min.	Av.	Max	Min.	Av.	Max	Min	Av.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Supervisors	150	60	..	..	..	..	..	..	125	80	150	104	..	..	..	..	..	..	..	..	..	..	..	..
Foremen .. .. .	..	..	40	28	35	43	28	35	100	45	120	70	65	40	53	75	50	63	..	..	..	63	54	59	87
Blowers	100	30	100	45	64	106	45	65	62	30	78	48	33	25	28	43	45	38	140	60	104	70	39	54	87
Bubblers .. .. .	..	..	40	20	30	43	20	31	14	12	24	22	23	12	16	33	22	26	..	..	..	45	14	22	48
Bangle-makers .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	38	13	19	46	21	27	..	..	..	..	..	..	..
Blacksmiths	108	32	70	40	46	74	40	47	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carboy-blowers .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	39	33	37	49	43	47	..	..	..	..	..	..	..
Carpenters	150	36	..	..	..	..	..	..	40	20	60	32	60	60	60	68	68	68	..	..	..	43	30	38	58
Chambermen .. .. .	..	..	50	20	39	53	20	45	..	..	..	..	25	25	25	35	35	35	..	..	..	43	30	38	58
Cutters .. .. .	..	..	..	..	..	..	..	..	22	12	27	22	M. 24	15	20	32	23	28	..	..	..	42	14	20	65
Compressors	150	60	..	..	..	..	..	..	..	..	..	..	C. 13	13	13	17	17	17	..	..	..	50	50	50	50
Drivers .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	35	25	30	43	33	38	..	..	..	43	25	33	66
Firemen .. .. .	..	..	55	28	38	58	28	40	20	20	47	32	41	27	35	51	37	45	..	..	..	..	..	..	..
Fitters .. .. .	..	..	..	..	..	..	..	..	80	25	104	40	48	30	36	56	38	44	..	..	..	..	..	..	..
Gatherers .. .. .	..	..	..	..	..	..	..	..	19	8	31	16	28	16	22	38	26	32	..	..	..	..	..	..	..
Grinders	70	29	20	13	18	21	13	18	..	..	..	..	M. 32	32	32	..	..	40	..	..	..	..	..	..	..
Helpers .. .. .	..	..	70	36	44	74	36	44	..	..	..	..	W. 16	11	14	22	11	17	..	..	..	..	..	..	..
Masons .. .. .	..	..	..	..	..	..	..	..	20	..	..	..	20	20	20	30	30	30	..	..	..	55	28	42	57
Mixers	54	32	..	..	..	..	..	..	..	..	..	..	60	60	60	68	68	68	..	..	..	23	21	22	40
Moulders .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Packers (ordinary)	M. 60	49	40	35	37	43	28	35	..	..	..	..	M. 37	37	37	45	45	45	..	..	..	..	..	..	..
Packers (in cases)	W. 30	30	..	..	..	..	..	..	..	..	..	..	W. 14	13	14	20	19	20	..	..	..	M. 34	25	30	49
Sorters	M. 42	35	..	..	..	..	..	..	..	..	..	..	C. 12	12	12	16	16	16	..	..	..	..	..	..	..
Coolies	M. 52	18	35	20	25	37	20	27	20	14	32	24	M. 40	20	26	48	20	32	..	..	..	..	..	..	..
	W. 30	30	22	13	18	23	13	20	16	10	28	18	W. 18	18	18	24	24	24	..	..	..	..	..	..	..
	C. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

APPENDIX VI.
*Wages of Glass Factory Workers in the Punjab.**

Unit.	Year	Mistry in charge	Workshop Mistry.	Fireman.	Driver	Coal-coolie.	Mixer.	Blower	Helper	Rulsa-walla.	Mculder.	Gaugeman.	Lineman.	Coolie.
G. 1 ..	1939	Rs. 40	Rs. 49	Rs. 20	Rs. 20	Rs. 15	Rs. 15	As 1½ per batch.	Rs. 25	Rs. 20	Rs. 10	Rs. 10	Rs. 12	Rs. 12
	1944	150	150	50	50	35	40	As. 6 per batch.	75	70	30	30	34	30
G. 2 ..	1942	Rs. ..	Rs. 1 8 0 per day	Rs. 25	Re. 1 per day	Rs. 21	Rs. 25	Rs. 55	Rs. 35	Rs. 25	As. 9 per day.	..	As 11 per day.	As. 9 per day.
	1944	150	2 10 0	45	Rs.2 10 0 per day.	34 14 0	40	120	70	48	Re. 1-1-0 per day.	..	Re. 1-4-0 per day.	Rs. 1 0 0 1 2 0 1 4 0 per day.
G. 3 ..	1942	Rs. 100	Rs. 44	Rs. 21	Rs. 22	..	..	As. 3 per batch.	Rs. 40	Rs. 25	As. 14 per day.	As. 14 per day.	Re. 1 per day.	As. 11 per day.
	1944	150	60	50	40	..	..	As. 4½ per batch.	75	55	Re. 1 per day.	Re. 1 day.	Rs.1 2 0 day.	As. 14 per day.
G. 4 ..	1944	Rs. 400	Rs. 90	Rs. 40 to 50	Rs. 60	Rs. 35	Rs. 40	As. 5 per batch	Rs. 75	Rs. 75	Rs. 35	Rs. 35	Rs. 40	Cullet sorters (women) 0-0-9 per basket. They earn As 15 per day. Packers As. 2 per bag or Rs. 1-0-0 per day.

*Figures are "per month" except where it is otherwise specified.

APPENDIX VII.

Estimate of Total Employment in the Glass Industry.

The latest figures available for employment in the regulated glass factories are those for the year 1943. Subsequent figures are not available, but there is no reason to suppose that employment had risen after 1943. Owing to transport difficulties, supplies of coal and raw materials have often been unobtainable, and in consequence there has been occasional unemployment. The figure for 1943, for registered factories was 18,328. The present employment, therefore, may be assumed to be in the neighbourhood of 18,000. Besides the registered factories, there are a large number of unregulated factories and cottage shops, manufacturing bangles, inkpots, hollow-ware, etc., on orthodox lines and also carrying on operations ancillary to the manufacture of bangle spirals in the factories. Firozabad in the United Provinces is the main centre of the unregulated industry, though there are several other centres of it scattered over the country, especially in the provinces of Bombay and Bengal. In trying to estimate employment in the unregulated shops, one enters a *terra incognita* of statistics, but an attempt is made to arrive at a rough estimate. There is such a concentration of the glass industry in Firozabad that our estimate of employment there will mainly decide the total. According to the *Paisa Fund Silver Jubilee Number*, (1935), p. 56, the probable employment in the unregulated industry in Firozabad is 12,000. This, however, appears to be an over-estimate. The total population of Firozabad is about 40,000. Even taking into account the fact that some of the children among this population are being employed, we must remember that a considerable section of the adults are engaged in the marketing of glass products and other subsidiary trades. Hence, the total number of workers actually employed in the manufacture of glass, whether on factory or cottage basis, cannot be more than 10,000. As the number of factory workers in Firozabad is round about 4,000 the total number of workers engaged in the cottage industry would be about 6,000. As regards other towns in the United Provinces, such as Saharanpur, Moradabad, Agra, Aligarh, Etah, Etawah, and Pratapgarh, the employment in cottage shops may be in the neighbourhood of 2,000. Thus in the United Provinces, we get a total of 8,000 for cottage shops. Outside the U.P., the cottage industry is less concentrated. We may put down the figure of 1,000 for Bombay, 500 for Bengal, and 500 for other areas. The final estimate is given below :—

	Employment.
<i>Regulated factories in British India</i>	18,000
<i>Regulated shops, including cottage shops and small factories.</i>	
United Provinces	8,000
Bombay	1,000
Bengal	500
Other Areas	500
Total ..	28,000

Thus it would appear that the final estimate may not be greater than 30,000 and, probably, not less than 25,000 for British India. As regards the Indian States, the production, both on factory and cottage basis, is being carried on on a fairly big scale at Bangalore, Ogalewadi, Hyderabad, Morvi, Wadhwan and Gwalior. The total employment in the Indian States may be in the neighbourhood of 5,000. Thus, for India as a whole, the estimate should lie between 30,000 and 35,000.

The figures for employment in the regulated glass factories from 1929 onwards are given in the following table :—

TABLE.

Average Daily Number of Workers Employed in the Glass Factories under the scope of the Factories Act.

Year.	U. P.	Bengal.	Bombay.	Madras.	Punjab.	C.P. & Berar.	Bihar.	Orissa.	Total
1929	1,308	603	230	..	100	77	..	..	2,318
1930	1,192	695	320	..	113	70	..	..	2,390
1931	1,725	688	838	..	144	93	..	..	3,488
1932	2,355	1,191	606	..	159	156	..	..	4,467
1933	2,372	1,468	714	138	153	160	..	..	5,005
1934	2,551	1,700	393	123	120	150	..	..	5,037
1935	3,186	537	890	126	129	163	..	..	6,031
1936	3,147	2,059	644	120	151	186	..	..	6,307
1937	3,734	2,371	404	100	120	275	..	152	7,156
1938	4,219	2,110	700	95	134	344	..	163	7,765
1939	4,733	2,280	1,025	100	204	375	14	203	8,934
1940	5,821	3,406	1,414	354	148	535	30	340	12,048
1941	8,038	4,649	1,724	821	345	706	177	243	16,703
1942	7,181	3,738	1,688	520	603	640	167	227	15,015
1943	7,753	4,990	3,293	747	722	219	382	222	18,328

APPENDIX VIII.

Glossary of Indian Terms.

Addas.—Cottage shops in which coral pipes are cut into bangles.

Astarwala.—A worker in glass bangle factories and workshops, who welds quantities of various coloured glasses to the facets of the glass block which is manipulated later by a *tarwala*.

Belanwala.—Lit., a roller man. He winds the roller while the *tarwala* draws out the glass parison into a thread.

Bhattas.—Small pot furnaces round which the *shishgars* sit when making bangles in the traditional way. Also the shops wherein the pot furnaces are installed.

Bubblewala.—A bubble-maker.

Churi.—Bangle.

Ginaiya.—Lit., one who counts. A worker employed in factories and cottage shops for counting the bangles.

Gulliwala.—A worker in glass bangle factories, who takes out molten glass at one end of the blow-pipe and passes it on to the *bubblewala*.

Jhukaiya.—Stoker at the small pot furnaces.

Jurai.—Joining.

Jurawala.—Joining-contractor and proprietor of joining shops.

Juraiya.—An employee of the *jurawala*. He heats the open ends of the bangles over burners and fuses them together.

Karkhana.—Lit., workshop or factory. Generally, a big establishment.

Kalaiya.—A cutter. In the bangle factories, he cuts the spirals into rings by scratching them with carborundum.

Lom.—Parison.

Lom-bananewala.—Parison-maker.

Lom-denewala.—Parison-carrier.

Muthewala.—He removes the spirals from the rollers with the help of a hooked rod.

Pahalwala.—*Pahal* means a facet. *Pahalwala* is one who makes the facets in a parison.

Pankhawala.—A worker in the joining and cutting shops. He works the bellows.

Sadhai.—The process of heating glass rings and putting the two ends together.

Sadhaiya.—A worker who does the *sadhai* work. The difference between this and *juraiya* is that while *sadhaiya* merely straightens the ends and brings them together, *juraiya* joins them. The word should really be *sidhaiya*.

Shishgar.—Lit., glassware maker. He manufactures bangles in the *bhattas* in the traditional way.

Tarwala.—*Tar* means wires. *Tarwala* is a worker who draws out the parison into glass threads with the help of an iron rod.

