AIDS AN OCCUPATIONAL DISEASE

The very mention of AIDS evokes very strong reactions in our society. This kind of reaction is because of two reasons. One since this disease is considered a sexually transmitted disease. A lot of stigmas are attached to sex and any STD is considered a dirty disease. Since this disease has been projected as a disease of a "wrong behaviour", the people's reaction towards the victim is that "you deserved it". Two because of the lack of discussion on this disease people have a lot of wrong information about how the infection spreads. There are people who believe that one can get infected even if one talks to an AIDS victim.

Since AIDS is disease of the most productive age group, it is going to be reflected in the industry very soon. Certain category of workers such as health workers, rag pickers have more chances of getting infection then others due to their working conditions. Workers of sectors such as engineering where accident rates are higher compared to other sector are also have more chances of getting infected during medical assistance (through infected blood, syringes).

The health workers as it are more prone to be affected by infectious diseases due to their occupation. In case of hepatitis it is noticed that health workers face the risk many times more than the general population. AIDS breaks down the defensiveness of the human body. The same health workers in wards, in laboratories are facing the risk of being infected by Virus which causes AIDS. Are our hospitals geared to see that health workers are protected?

Aids is another problem like sexual harassment at workplace which is going to raise number of questions about working condition. For example in case of Transport workers i.e. Railways, where due to job requirement workers are being posted in the middle of a jungle for years together for jobs such as laying of tracks etc. In such remote places health facilities are so inadequate that arranging for disposable syringes is almost impossible. If a worker falls sick and gets an injection through which virus is being transmitted, who should be held responsible the worker, the hospital or the employer. Similarly if these workers indulge in sex outside their marriage because their partners cannot live in such conditions, and get the infection. Should we still preach exercising control over their sexual behaviour. Migrant workers living in places like Bombay and Calcutta who live in such inhuman condition that they can only hire a place for sleeping in shifts. If these workers indulge in casual sexual contact with partners outside their marriage, should they be held responsible.

If we compare this situation with drug abuse at workplace we will realise that most of the workers who use drugs at workplace are the ones who have been working since long time on night shifts. One of the reason of using drugs has been that these workers loose any social contact outside their workplace. Recently while giving interviews workers from Bombay Municipality complained of their partners deserting and children not recognising them because for last many years these workers have been working in night shift. It is not that they have chosen to work in night shift but because the drainage cleaning etc. can take place only at night because during the day the roads are very busy. If these workers indulge in ex-wives or marriage or having another lover, who should be held responsible.

If the real cause for such "Wrong behaviour" lies in wrong working conditions, then should the working conditions be improved or with a Biblical attitude the liability of the disease should be dumped on to the workers behaviour. The similar condition exist in case of most other occupational hazards also for example if worker falls from height it is believed that it is because of careless behaviour of the worker and not the careless design of the workplace.

The situation in case of AIDS is almost the same as is in case of exposure to chemicals and dust. It is believed that the conditions responsible for exposure need not be improved, rather workers need to be taught about wearing personal protective equipment. By propagating personal protection, the onus of responsibility to exposure is also shifted to the individual.

If we seriously want to control the spread of this disease, the steps for prevention are needed at two levels first at the level of the individuals and two at the level of medical system and working conditions. No amount of people's education alone is going to help if the loopholes in the medical practice and the inhuman working conditions are going to remain.
COTTON DUST - HOW IT CAN AFFECT YOU?

Cotton dust gets into the air during the handling and processing of cotton. It is present wherever raw cotton is used. Raw cotton comes out not only from bales but also from floor sweepings and other wastes emanating from cotton processing operations.

The invisible or small dust particles are very dangerous and enter into the alveoli of the lungs after inhaling. Alveoli are minute air sacks which make close contact with the blood that flows in the lungs. Here blood receives oxygen and discharges carbon dioxide. As the cotton dust penetrates the alveoli, it gets accumulated in the lymphatics (very fine tubes in the central area of lung). Continuous accumulation of the dust in the lungs damages the alveoli and reduces the capacity to retain oxygen. As the cotton dust accumulation increases, the worker develops a brown lung and suffers from byssinosis.

The symptoms of byssinosis were first documented way back in 1748 by Dr. Ramazzini, the father of occupational medicine. Since then, many researchers are carried on to know the exact symptoms of the disease caused by the cotton dust. Till date, there is a great deal of confusion about the clinical manifestation of byssinosis among Indian workers, and the basis for diagnosis remains uncertain. Yet it has been established that the presence of cough and phlegm or sputum along with varied types of chest tightness, chest iritation, breathlessness and low fever are the main symptoms of byssinosis.

Stages of Brown Lung of Byssinosis

Grade - 0 No symptom of byssinosis

Grade - 1/2 Occasional chest tightness on the first day of the work

Grade - I Chest tightness and/or breathlessness on every first working day.

Grade - II Chest tightness and/or breathlessness on the first and other working days.

Grade - III Permanent incapacity results because of reduced breathing capacity.

The final stage of illness resembles other serious respiratory diseases like asthma and chronic bronchitis with considerable trouble in breathing. An X-ray of the lung shows it full of holes evidence of destroyed alveoli. The decline in lung function is the primary symptom of brown lung. It can be detected by medical examination done through a standard breathing test (Pulmonary Function Test). The instrument used for the testing purpose is called Spirometer. The pulmonary function test provides two measurements: the Forced Expiratory Volume (FEV) - the amount of air that lungs can blow out, and Forced Vital Capacity (FVC) - the amount of air the lungs can retain before blowing. When workers chronically exposed to cotton dust are asked to blow on a spirometer the FEV and FVC show a graph relatively lower than the graph shown for normal person.

The early stages. Brown Lung victims suffer from cough, tightness of chest and shortness of breath, upon return to work on Mondays. These symptoms may disappear later in the week, but this does not mean that the condition is not harmful. However, in this early stage, the effects can be arrested if the affected worker is removed from the dusty room and posted elsewhere. In order to save other workers from falling ill with brown lung, the dust control measures in the work place where he fell ill be must made more stringent and dust monitoring be done more frequently, carefully and regularly. In absence of any such preventive measures as described, these reactions to cotton dust exposure can get worse and one can finally develop a serious respiratory disease called 'Byssinosis', or Brown Lung Disease. The symptoms stated above extend to other work days and finally they become more severe and continuous, resulting in total and permanent disability. If dusty conditions in the work room are not urgently remedied, not one but many workers in the shop floor become simultaneously affected.

Many cotton mill workers whose breathing problems have been diagnosed by unsuspecting physicians as Emphysema, Asthma or Bronchitis, Probably in fact are the cases of Byssinosis in its various stages of development.

Diagnosis of byssinosis is based on symptoms, occupational history, and measurements of diminished lung function during exposure. Because the disease primarily affects the function of the lung rather than causing a specific change in its structure, it is not diagnosable only by chest x-ray.
BYSSINOSIS AMONG TEXTILE WORKERS OF AHMEDABAD

Every now and then the alternative research undertaken by the peoples groups, communities and workers are labelled by the so called scientific community as impressionistic, nonsystematic or methodologically inaccurate.

Increasingly it is becoming important for the affected party i.e. tribals, slum dwellers, women and in this case workers to come up with information which can answer the questions raised by the unaffected parties and establish the relevance and accuracy of data and information collected by them.

The effort of studying the problem of byssinosis among textile workers of Ahmedabad, undertaken by the National Campaign on Dust Related Lung Diseases was an effort to move in this direction.

The Effort:

Ahmedabad the textile center of India has more than 48 mills employing thousands of workers. But till recently hardly these workers knew that they are exposed to a deadly disease called byssinosis, a chronic lung disease that is observed mostly among workers exposed to cotton, flax and hemp dust. In a recent survey done by N.I.O.H. (Ahmedabad) it was established that more than 30% workers are suffering in blow room and more than 36% are suffering in the card room.

A National Campaign on Dust Related Lung Diseases was initiated in year 1990 with the objective of raising awareness among workers and trade unions about the diseases, caused due to exposure to dust at the work place. As part of this work the Campaign motivated the local union to undertake an effort to claim compensation under E.S.I.S. for the workers diagnosed by N.I.O.H. as suffering from Byssinosis. As a result about 13 workers have so far been compensated.

This survey was in continuation of this effort of mobilising and building awareness of workers and unions. The findings of the survey are only an indicator of the fact that workers are suffering with this deadly disease.

This survey organised by the workers also shows that increasingly workers and their organisations are able to mobilise the tools and techniques, of gathering relevant information, which were generally considered the prerogatives of experts only. Hence no longer information collected by the workers can easily be termed as impressionist on the grounds of non availability of scientific evidences to prove that they are suffering with a particular disease. These so-called scientific evidences are needed because the entire system of diagnosing lung disease is based on mistrust. The practice is to not believe the patient unless proven otherwise. While the reality is that the only conclusive evidence of a worker suffering with a lung disease can be found only in the workers narration of his Occupational History and symptoms. International Labour Organisation says:- "In its final stage the disease cannot be distinguished from chronic bronchitis and emphysema due to non-occupational causes, except for the past history of chest tightness characteristically worse at the beginning of the week. The patient often forgets his early symptoms and is diagnosed as suffering from a non-occupational chronic respiratory disease. Chest X-rays do not show changes specific for byssinosis, nor has any specific pathology been identified in the lungs of workers who have died of this disease. Any X-ray or pathological changes in the lungs are the same as those also found in chronic bronchitis and emphysema due to non occupational causes." (I.L.O. Encyclopedia of Occupational Health and Safety) As far as the lung function test are concerned, the best machine can detect any thing only after one third of the lungs have already been damaged.

All this means that not only we need to use the so called scientific instruments in our research to be able to present our findings in a manner in which it is acceptable to the 'authorities', but also keep raising questions about the malpractices in today’s system of diagnosis and treatment.

The Methodology:

The survey was conducted in four mills: Jupiter mill, Rajinagar mill, Star of Gujarat and New Manek Chowk. In Ahmedabad the Voluntary retirement scheme in all the mills managed by National Textile Corporation is going on in full swing. A large number of workers have lost their jobs in this process. Out of these four mills Jupiter was completely closed and Rajinagar was partly functioning, rest of the two mills were functioning with almost full capacity.

The Union participation: in this effort members of two major unions participated. Mr. Ashim Roy of H.M.K.P. and Mr. Hausila Prasad Misra of Major Mahajan took the responsibility of mobilising workers to take part in this study. The selection of mills and workers was done jointly by both of them.
The Selection of Sample: We did not use any special technique in selecting the workers who were examined in this exercise. It was announced in the mills that the examination of workers specifically from spinning department is going to take place. But in case a worker from other department also happened to come, s/he was also examined and findings recorded.

We examined a total of 362 workers from four mills: 84 workers from Rajnagar textile mill, 115 workers from Jupiter mill, 83 workers from New Manek Chowk mill, and 80 workers from the Star of Gujarat mill.

The Questionnaire: A detailed questionnaire based on the original questionnaire used by Dr. J.R. Parikh (of National Institute of Occupational Health based in Ahmedabad) in his research was prepared. This questionnaire consisted of a set of questions about their occupational history, cough, chest tightness, breathlessness, sputum, etc.

The Lung Function Test: The Lung Function Test: was carried out on Wright Ventilometer VM-1, giving digital readings of FVC, FVC1, FEV/FVC1% and PEF. Every worker was first explained the way to use the equipment. Explanation was followed up with a demonstration and then the reading of each worker was taken three times and the highest reading was recorded. Any worker recording FEV/FVC1% more than 60-85% was considered normal, if his/her occupational history and reported symptoms also matched with this reading. While every worker with FEV/FVC1% of 75% below was classified as worker suffering with lung disease.

Since our survey was conducted in closed mills as well as mills which are partially open, we did not do the lung function test before and after the shift on first working day.

The Clinical Test: Apart from lung function test the clinical examination was done by a team of doctors from Industrial Hygiene Laboratory, Ahmedabad. I.H.L. has also prepared a report of their findings.

In this effort of ours we realised that in many cases the clinical report and the report of lung function test did not match. Now the question comes of giving weight to any one report out of these two. Should we give weight to clinical examination which is an interpretation of physical symptoms, where possibility of mistake is much higher, as noted by I.H.L. that often patient is diagnosed as suffering from a non occupational chronic respiratory disease, or should we accept the recording of lung function test as most conclusive evidence along with occupational history? We decided to go for the second option.

The findings:

Workers Suffering: Out of the total of 362 workers, 101 workers recorded FEV/FVC1 percentage below 75%. If we consider this recording as an indication of presence of byssinosis, then approximately one out of three workers (27.90%) are suffering with byssinosis. The interesting thing here is that the percentage of probable cases of byssinosis is lower in mills which are fully or partially closed, in completely non functioning Jupiter mill the percentage of probable cases of byssinosis is only 20%, similarly in Rajnagar Textile mill which is partially functioning, the percentage is 21.43% compared to functioning mills like Star of Gujarat, where 36.25% workers have recorded the FEV/FVC1% below 75% and in New Maneck Chowk mill, 37.35% workers are having symptoms of Byssinosis.

Department wise distribution: If we combine the total workers of Blow room (27), Card room (61) and workers from ringframe (188), in a category of workers from spinning department then the total number of workers from this department comes to 276 workers or 76.88%. From the Weaving department only 11.14% workers were covered in this study, the rest of 11.98% workers were from other departments. The highest number of workers from blow room (15workers) and card room (26 workers) participated in the study were from the Star of Gujarat mill. These two sections of Spinning department generally have higher concentration of Dust. Interestingly the highest percentage of workers with byssinotic symptoms are also from Star of Gujarat mill.

Years of Exposure: The maximum number of workers (249) have been working in their respective mills for more than 11 years. While there are only 81 workers who have completed 21 years of their service.

Chest discomfort All most two out of three workers complained of suffering with some amount of chest discomfort. The total number of 258 workers out of 359 reported of this problem. While the chest tightness was being experienced by relatively less number of workers. Total of 177 worker workers complained of chest tightness.

Cough and Sputum: Almost half of the workers (44.23% or the total of 159 workers) examined are suffering with cough since last two years and almost the same number of workers (150) reported that they do not throw up sputum when they get up in the morning, while 193 workers reported of suffering with Sputum. Generally Cough with Sputum is not considered something very alarming but if it is combined with history of exposure to cotton dust it becomes one of the major indicator of Byssinosis.
Breathlessness: The maximum number of workers reported to be suffering with breathlessness. One out of three workers said they become breathless on climbing a slope. While more than 5% workers said they become breathless when they walk even few steps.

MILL WISE GENERAL REPORTS:

JUPITER MILL, AHMEDABAD

Total 115 workers were examined on 3rd January 1993. Out of these 115 workers, there were 102 (88.66%) males and 13 (11.34%) were females. No evidence of child labour was found in this factory, but the majority of workers were from the age group 37-55 years (69 workers). Only 6 workers were more than 55 years of age.

Not a single representation was from Blowroom, but there were 17 workers (14.75%) from Cardroom section. Majority of workers were from Ringframe section (68 workers i.e., 58.99%). There were 84 workers (76.51%) who had completed 11 to 20 years of service. For majority of workers (94 workers i.e., 81.73%) this was their first employment.

Attempts were made to meet workers from all the three shifts. There were 42 smokers and 73 non-smokers among the workers.

53 workers reported having chest discomfort and 41 workers experience chest tightness after starting their work. 41 (34.78%) workers feel worse on the day they come back to duty after their weekend (holiday). 61 (53.03%) workers cough when they get up in the morning. This is the first thing with which they start their day. 49 workers (42.60%) had been suffering for two years. As far as throwing sputum with cough is concerned there are 53 workers (46.08%) who are suffering with this problem.

16 workers in this mill complained that they have to sit if they walk for about 100 steps. Others also complained of breathlessness but it was not as severe.

According to our estimates about 24 workers (20.68%) which comes to every fifth worker is suffering with Byssinosis in this mill.

Since this mill is already been closed for several months so it affected the survey in many ways. Most of the workers with long service in the mill had already left the service under voluntary retirement scheme. The low figure of only 6 workers in the age group of 55 years proves this fact.

The present exposure to the workers of cotton dust was absent so the exact information collection on the holiday sickness and chest tightness was hindered.

RAJNAGAR MILLS

Total 84 workers of Rajnagar Mill, were examined on 6th January, 1993. Out of these 84 workers there were 71 (84.52%) males and 13 (15.48%) females. No evidence of child labour was found in this mill, but majority of workers are from the age group 37-55 years (46 workers).

Efforts were done to cover workers from blowroom, cardroom and ringframe sections. Out of 84 workers 4 were from blowroom, 9 from cardroom and 53 workers were from ringframe section. 64 workers (76.19%) have been working in this mill since last 11 to 20 years, and 5 (5.95%) had worked for more than 21 years. For majority of workers (73 workers i.e., 86.85%) this was their first employment.

Attempts were made to meet workers from all the three shifts but majority came from the first shift.

56 workers (66.96%) out of 84 were having serious problem of chest discomfort and 32 (38.10%) felt worse after they came back from their weekend or holiday. This means that chest tightness is more on the first day after holiday, this is one of the significant symptoms of byssinosis. 27 workers (32.14%) cough when they get up after sleep. As far as throwing sputum in the morning is concerned 46.42% workers reported negatively to the Question, while 53.57% reported positively.

Most of the workers are affected by breathlessness, they complained of difficulty in walking up a the slope. One out of five workers (21.42%) are suffering with Byssinosis in this mill.

NEW MANEK CHOWK MILL

Total 80 workers of New Manek Chowk Mill were examined on 7th January, 1993.

Out of the total of 80 workers 73 were males and 7 females. Out of this, there were 52 (64%) smokers and 48 non-smokers (60%). No child labour was found in the group but majority of workers (53) were from the age group of 37-55. Only 3 workers were from the age group of more than 55 years. 55 (68.75%) workers had completed 11 to 20 years of their service and for 57 workers (71.25%) this was their first employment.
Effort was made to include workers from all the three shifts. 8(6.25%) were from blowroom, 9(11.25%) from cardroom, 27(33.75%) from ringframe and 25(31.75%) from weaving section.

62 workers (77.50%) are having chest discomfort and 41 (51.25%) workers experience this chest discomfort during the whole period of their work on duty. 46 workers (57.50%) feel worse on the first day after their holiday, which means that on the first day after their weekend their problem of chest tightness is more as compared to the other days of the week, which is one of the significant symptoms of byssinosis.

44(55%) workers cough when they get up in the morning. 40 workers had been affected by cough problem for more than three months in the year continuously and 39(48.75%) had been suffering for more than two years. While comparing this Information with workers suffering with sputum it was realised that 39(48.75%) workers have no such complaint of sputum, while 41(51.25) reported positively.

Most of the workers (37 i.e. 46.25%) are affected with breathlessness. There are 31 workers (38.75%) almost one out of every third worker who is suffering with byssinosis in this mill. Their FVC/FEV percentage was less than 75 percent.

**STAR OF GUJARAT**

80 workers of Star of Gujarat Mill were examined on 8th January 1993. Out of the total of 80 workers surveyed, 15 (18.75%), 26(32.50%), and 39 (48.75%) were from blowroom, cardroom and ringframe sections respectively. All of them were male, and 42(52.50%) had spent 11-20 years of their life in working in this mill. 57 (71.25%) started their career in this mill. Out of a total of 90 the majority of them were (52) non-smokers. Attempts were made by the team to meet workers from all the three shifts. There were 46, 7 and 25 workers from first, second and third shifts respectively.

Almost each worker complained of (77 workers, 96.25%) having chest problem and 63 workers (78.75%) experience chest tightness after starting their work. Coming to their duty after holiday, 49 workers (61.25%) feel this problem more as compared to any other working day. It can be construed that these workers are suffering from Monday sickness, where a worker suffering with Byssinosis feels maximum level of uncomport when he report to work after the week off.

63 (78.75%) workers start their day with coughing in the morning and 65 (81.25%) have cough problem for more than three months continuously. 41 workers (51.25%) are having this problem for more than two years. It is significant here that this mill was closed for some period and it has opened since last two years, so many workers (33 i.e. 41.25%) have termed their problem for less than two years. 60 (75%) workers throw sputum after getting up from their sleep. While 17(21.25) reported negatively to the question.

Majority of workers (40 i.e. 50%) come under the Grade of breathlessness. Remarkably high number of workers (29 i.e. 36.25%) are having FEV/FVC percentage below 75 percent.

**Observations:**

One of the most important observation we made during our survey was that most of the workers suffering with byssinosis are being treated as either T.B. patients or as asthmatic patients. The main reason being that our medical practitioners are generally not equipped to differentiate between Asthma and Byssinosis. The other reason is that even if they are able to diagnose, they do not know what are the medicines for Byssinosis patients (as there are no medicines for Byssinosis). In case the diagnosis is of T.B. the person is admitted in T.B. ward where even if the patient is not really suffering with T.B. can get infected with T.B. especially if the lungs are already weak. The most common medicines given for byssinosis are "Tab Thosha, Tab Disprin, Tab Brufen, Tab Betvele" and for bronchial asthma "Sal Butamol, Bromhexine, hydroxyethyl".

**The discussion:**

First of all we would like to say that our findings are more suggestive in nature instead of being conclusive. We believe that on the basis of this report workers and unions will be able to create enough pressure on appropriate authorities to get the full checkup done and move in the direction of claiming their rightful compensation from Employees State Insurance Scheme. ESIS is a scheme where workers get themselves insured against diseases and loss of earning capacity during the course of their employment.

The widely accepted method of diagnosing the prevalence of byssinosis is by undertaking lung function test on first working day at the beginning and at the end of the shift. The difference in these two readings suggest the extent of dust on worker's lungs.

Whatever limited facility of lung function test we have in our country is primarily with the scientific bodies which undertake such research based on their agenda and the orders from above. As a result such a vital monitoring facility is not available for regular monitoring of the health of the workers. Since worker and unions gener-
ally do not have any control over these scientific research organisations, hence getting any such diagnosis done becomes almost impossible. Hiring of such capacity becomes impossible for any small union as this test can only be done on the first day of the week. Hence the prohibitory expenses involved in undertaking such research make it impossible for a union to come up with their findings. Very few hospitals run by E.S.I. are also equipped with this facility. For the purpose of this study the Wright Ventilometer VM-1 was provided by PRLA.

Few questions which emerge from this scenario are that how realistic are the results of E.S.I. Special Medical Board which decides on the degree of impairment in case of any complaint, because this board does not do the diagnosis on the first working day of the week but sits on its own convenient day. Recently E.S.I. has issued a notification specifying that a worker appearing for lung function test for Byssinosis test should not have worked at least continuously for 48 hours before this test. What is the accuracy of the lung function test done on any day of the week specially when worker has not got the exposure for 48 hours? What is the most effective way of monitoring and preventing the spread of the disease? Should not this facility be available on demand of the workers, to enable them to protect their health? Should not such periodic tests be made mandatory? It was surprising to note that Industrial Health Laboratory, Ahmedabad which collaborated in this effort did not have any such facility at its disposal (I.H.L. works under the office of Chief Factories Inspectorate).

Conclusion:
First of all the finding strongly suggests two things. One that about thirty percent workers showed signs of Byssinosis and two, a large number of other workers are suffering with other lungs diseases such as T.B., Asthma, Bronchitis etc. We believe that instead of assuming that these other lung diseases are due to smoking or any other such habit, we need to find out the nexus between these lung disease and the exposure to dust. This is important because it what I.L.O. says is true that in later stage of the diseases it is difficult to differentiate between Byssinosis and any other respiratory disorder, then we need to do a more rigorous exercise in establishing the real cause of the disease other workers are suffering with.

As we said in the beginning that this effort is a step in the direction of workers undertaking research to support their claims and arguments. Hence more than the findings, the process of doing this exercise was important. This is the process which unions and workers need to undertake to be able to voice their rightful claim.

**Indicators:**
- A = STAR of Gujarat Mills
- B = Rajnagar Mill
- C = New Manik Chownkh Mill
- D = Jupiter Mill

<table>
<thead>
<tr>
<th>MILL NAME</th>
<th>BLOW ROOM</th>
<th>CARD ROOM</th>
<th>WEAVING</th>
<th>SPINNING</th>
<th>OTHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15(18.75%)</td>
<td>26(32.50%)</td>
<td>0(0%)</td>
<td>39(48.75%)</td>
<td>0(0%)</td>
<td>80</td>
</tr>
<tr>
<td>B</td>
<td>4(4.76%)</td>
<td>9(10.71%)</td>
<td>1(1.19%)</td>
<td>53(63.09%)</td>
<td>17(20.23%)</td>
<td>84</td>
</tr>
<tr>
<td>C</td>
<td>8(10%)</td>
<td>9(11.25%)</td>
<td>25(31.25%)</td>
<td>27(33.75%)</td>
<td>11(13.75%)</td>
<td>80</td>
</tr>
<tr>
<td>D</td>
<td>0(0%)</td>
<td>17(14.78%)</td>
<td>14(12.17%)</td>
<td>69(59.99%)</td>
<td>15(13.04%)</td>
<td>115</td>
</tr>
</tbody>
</table>

| TOTAL     | 27(7.52%)| 61(17%)   | 40(11.14%)| 188(52.36%)| 43(11.98%)| 359  |

**TABLE 1**

(DEPARTMENT)
### TABLE II (WORKING YEARS)

<table>
<thead>
<tr>
<th>MILL NAME</th>
<th>0 - 10</th>
<th>11-20</th>
<th>21-30</th>
<th>31- Above</th>
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<tr>
<td>A</td>
<td>16 (20%)</td>
<td>42 (52.8%)</td>
<td>17 (21.26%)</td>
<td>3 (3.75%)</td>
<td>2 (2.50%)</td>
<td>80</td>
</tr>
<tr>
<td>B</td>
<td>3 (3.52%)</td>
<td>64 (76.19%)</td>
<td>12 (14.28%)</td>
<td>5 (5.95%)</td>
<td>0</td>
<td>84</td>
</tr>
<tr>
<td>C</td>
<td>5 (6.25%)</td>
<td>55 (68.75%)</td>
<td>13 (16.25%)</td>
<td>7 (8.75%)</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>D</td>
<td>3 (2.6%)</td>
<td>88 (76.61%)</td>
<td>22 (19.12%)</td>
<td>2 (1.73%)</td>
<td>0</td>
<td>115</td>
</tr>
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</table>

#### TABLE III

Suffered from lung diseases for more than 3 months in the past

<table>
<thead>
<tr>
<th>MILL NAME</th>
<th>Number</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>A</td>
<td>65 (81.25%)</td>
<td>80</td>
</tr>
<tr>
<td>B</td>
<td>34 (40.47%)</td>
<td>84</td>
</tr>
<tr>
<td>C</td>
<td>51 (63.75%)</td>
<td>80</td>
</tr>
<tr>
<td>D</td>
<td>30 (25.06%)</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>180 (50.13%)</td>
<td>359</td>
</tr>
</tbody>
</table>

### TABLE IV FEV/FVC %

<table>
<thead>
<tr>
<th>MILL NAME</th>
<th>0 - 75</th>
<th>76-85</th>
<th>86 ABOVE</th>
<th>NA</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>29 (36.25%)</td>
<td>31 (38.75%)</td>
<td>19 (23.75%)</td>
<td>1 (1.25%)</td>
<td>80</td>
</tr>
<tr>
<td>B</td>
<td>18 (21.42%)</td>
<td>23 (27.38%)</td>
<td>41 (48.60%)</td>
<td>2 (2.38%)</td>
<td>84</td>
</tr>
<tr>
<td>C</td>
<td>31 (38.75%)</td>
<td>27 (33.75%)</td>
<td>18 (22.50%)</td>
<td>4 (5.00%)</td>
<td>80</td>
</tr>
<tr>
<td>D</td>
<td>24 (29.56%)</td>
<td>41 (48.64%)</td>
<td>49 (57.13%)</td>
<td>2 (1.73%)</td>
<td>115</td>
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<tr>
<td></td>
<td>102 (28.41%)</td>
<td>122 (33.99%)</td>
<td>126 (35.50%)</td>
<td>9 (2.50%)</td>
<td>359</td>
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</table>

### TABLE V (BREATHTLESSNESS)

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<thead>
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<th>NAME OF YR.C MILL</th>
<th>Gr I</th>
<th>Yr II</th>
<th>Yr III</th>
<th>Yr IV</th>
<th>N.A</th>
<th>TOTAL</th>
</tr>
</thead>
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<td>A</td>
<td>9 (11.25%)</td>
<td>40 (50.0%)</td>
<td>10 (12.30%)</td>
<td>6 (7.50%)</td>
<td>10 (12.50%)</td>
<td>5 (6.25%)</td>
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<tr>
<td>B</td>
<td>15 (17.85%)</td>
<td>31 (38.90%)</td>
<td>2 (2.38%)</td>
<td>5 (5.95%)</td>
<td>0 (0%)</td>
<td>31 (38.90%)</td>
</tr>
<tr>
<td>C</td>
<td>12 (16.00%)</td>
<td>37 (46.25%)</td>
<td>2 (2.50%)</td>
<td>9 (11.25%)</td>
<td>6 (7.50%)</td>
<td>14 (17.50%)</td>
</tr>
<tr>
<td>D</td>
<td>21 (18.25%)</td>
<td>26 (21.73%)</td>
<td>5 (4.34%)</td>
<td>16 (3.91%)</td>
<td>2 (1.73%)</td>
<td>46 (39.99%)</td>
</tr>
<tr>
<td></td>
<td>57 (15.88%)</td>
<td>133 (37.04%)</td>
<td>19 (5.30%)</td>
<td>36 (10.02%)</td>
<td>18 (5.01%)</td>
<td>96.26 (75%)</td>
</tr>
</tbody>
</table>
solvents
Do your brains in.

ORGANIC SOLVENTS


Destroying peoples' brains with chemicals might sound like the stuff of horror movies, but it's not. It happens to increasing numbers of people exposed to organic solvents at work. The US government names chemical neurotoxicity in its top ten list of workplace diseases. Other countries pay affected workers state pensions for "sensory disability." In the UK, the hazard is neither recognised nor compensated.

Solvents have thousands of uses in industry - most of them available. They are common in household products, from furniture and tiles to varnish, to cleaning fluids and shampoos. If you have used gluestick paint or cigarette gum and it has made you dizzy, then that is solvents temporarily affecting your brain. Use them regularly at work and it can have you not just dizzy, but daffy, confused, irritable, unable and disabled - permanently.

Based on our experience I would estimate that between five and ten thousand workers in the UK are currently being damaged by solvents every year. Says Dr Per Gjergens, Physician-In-Chief at Copper Beech's Department of Occupational Medicine and a world authority on the topic.

You don't have to believe the stuff to be affected. "There is a strong likelihood of a correlation between long-lasting exposure to various concentrations of solvents and the development of brain damage," says Gjergens. The recognition of such damage must result in the institution of preventative means against workplace and working conditions which induce acute and chronic brain damage."
1. Five workers killed in a blast in ordinance factory.

2. Two died in mine collapse.
In village Uthana in Devi town, (New Delhi) two workers died when the illegal mine in which they were working collapsed. In this accident on 28 Feb. 1993, Gopal and Krishan lost their life.

3. Two workers lost their life in mine accident.
In two separate accidents in the coal mines of Chambad (Bihar), on 17 Feb. 1993, two workers lost their lives. In the Gopakachak underground mine, which is owned by Bharat coal mining limited, Upenra Singh and Kavraj were working in the 6th number seam and around one p.m. the seam collapsed. This accident resulted in the on the spot death of Upenra Singh and serious injuries to Kavraj. Owerman Chandrika Prasad died when sand stone collapsed over him in the Jitpur colliery of Indian Iron and Steel Company. (Jansatta, 18 Feb 1993)

4. Seven workers killed in marble mine collapse.
In Ame Marble mines, which is twenty five kilometers away from Jaisalmer district of Rajasthan, Seven workers lost their life on 8 Feb. 1993. The dead included two women workers also. The names of workers who lost their life in this mine collapse are Lalit, Harkna, Bagha, Nore, and the women workers Fatid and Jija. (Rajasthan Patrika, Jatpur, 16 Feb. 1993)

5. Workers demand insurance cover.
The workers of Vajapur, Azaqpur, Samaypur And Rajasthan Industrial Nagar demanded life insurance scheme for them. The Gen. sect. of JD(A) Delhi, Mr. Jawahar Singh said that due to acid and steel strips many workers have either lost their lives or suffered permanent disablement. There are around one lakh workers in the steel factories in these areas. (Punjab Kesari, New Delhi, 16 Jan. 1993)

6. Two workers died in the roof collapse.
On 23 Jan. 1993, the roof of hundreds year old building of Delhi Cloth Mill collapsed, killing two workers and injuring more than forty of them. Around a dozen workers were involved in the demolition of the roof of second floor. But in this whole process the major part of the building collapsed. Due to the continuous leakage of chlorine gas this factory was closed in 1989. Now the owner wants to build a commercial and luxurious residential complex in this prime land of the capital. {Nav Bharat Times (New Delhi) 24 Jan. 1993}

7. Eleven killed in Thane gas leak.
On 17 March 1993, eleven people were killed and thirty were seriously affected due to gas leak from the nullah near the Century Rayon limited Plant at Sahad near Thane (Maharashtra). This tragedy occurred between 6.30 and 8.00 a.m when sulfuric acid of 10% concentration leaked from the spin bar of the factory and spilled on the nullah. What precipitated the tragedy was the failure of power supply from MSEB and the stand by power system of the Century Rayon. Owning to the failure of the power supply, the overflow from the spin bar unit could not be treated at the affluent. This factory, established in 1955, manufactures every month 1,100 tonnes of filament yarn, 380 tonnes of rayon tyre yarn, apart of hazardous chemicals like carbon disulphide (3500 tonnes per month) and sodium sulphide. Responding to the complaint of Maharashtra Pollution control board under the instruction of environment ministry under sections 304 A of the IPC read with the sections 337, 338, 427 and 422, the executive president Durgesh Chandria, senior vice president L.F. Mehta, General Manager operations V. K. Jain and senior manager for safety, health and environment H.G. Uttamchandani were arrested. Under the section 6 of the Environment protection act the factory has been closed.

The unknown poisonous gas which killed people was produced by a mixture of sulphuric acid, flowing out of century Rayon Mill with the effluents of unidentified chemicals discharged from neighboring industries. A sample of the effluent tested in the laboratory, revealed that cyanide compounds were present in the nullah. H2S04, which passed through it, reacted with it and formed hydrogen cyanide (HCN). This highly poisonous gas is colourless and smells like bitter almonds. Inhalation of HCN fumes, even to small amount can cause nausea of appetite, headache, weakness, dizziness, irritation and vomiting. (Economic Times (New Delhi) 18 March 1993) (Indian Express (New Delhi) 19 March 1993) (The Times Of India (New Delhi) 20 March 1993)

On March 1993, Workers trying to dismantle a bomb for scrap metal accidentally set off an explosion which killed nine of them and flattened their iron works. Farmers had found 200 kg bomb in the rural part of northern Hebei province and sold it as scrap to the local Tongxing iron works. When workers applied blow torch it exploded with a blast that demolished houses up to 200 meters away and left a crater one meter deep. (Hindustan Times (New Delhi) 19 March 1993)

9. Seven workers buried alive.
On 17 March 1993, seven workers were found buried alive on the site they were working at on July 1992. The workers were digging a well in Jawar village in Bhilwara district of Rajasthan. (The Times Of India (New Delhi) 19 March 1993)
VITAL STATISTICS

Seven million US workers are injured on the job every year. That represents one out of every 11 workers. Ten percent of the workforce will be killed or permanently disabled on the job. On average, every worker will be injured 2.5 times during the course of their career.


GAS STATION ATTENDANTS AND CANCER

A Danish study has found a significant number of excess death from respiratory cancer in male gas station attendants compared to men employed in other occupations.

This adds evidence collected by international Agency for Research on Cancer. In their 1980 assessment of cancer risk in workers exposed to petrol, other fuel and crude oil they found excessive rates of skin cancer and leukemia amongst petrol refinery workers, classifying the industry as probably cancer causing to humans.

CANCER AGENTS FOUND IN PETROLEUM/FUELS

1. CRUDE OIL: Arsenic Compounds
   Benzene, Carbazole
   Nickel Compounds
   Poly cyclic aromatic hydrocarbons (PAH's)

2. PETROL: BENZENE
   1,3 Butadiene
   1,2 Dibromoethane
   1,2 Dichloroethane
   Lead Compound

3. JET FUEL: Benzene

4. DIESEL: Benzene
   Poly cyclic aromatic hydrocarbons (PAH's) WHIN. Dec. 1992

SIX WORKERS DIE IN SPANISH TEXTILE COVER-UP

An investigation of fifteen Spanish textile factories have revealed a sudden death of many lung diseases early 1992. Spanish Labor inspectorate closed the Ardyall textile plant near Alcalde. Textile spray painter Isabel Miro, 28, and Yovana Gonzalez, 17 died of lung diseases. In Yovana's death certificate the cause was defined as "Probably due to lung interstitial fibrosis related to occupational exposure to chemicals". Yovana worked with other fifteen women in a workshop spraying aerosol paints supplied by the multinational Buyer. There were no exhaust, ventilation, no protective screens and only two protective masks available.

Symptoms: Regular nose bleeding and mucous discharges affected both the dead women and other workers in the factory. Their symptoms steadily worsened with breathing problems (respiratory insufficiency) developing later. Yovana died only three months after her first symptoms appeared. As a result of Yovana's death in May 1992, evidence came to light implicating working condition in Ardyall. The most obvious was the death of 28 years old Isabel Miro three months before. She had worked for two years in the same factory. The physician who treated her had diagnosed tuberculosis but never related her symptoms to her working conditions.

WHIN (Dec. '92)

ALARMING INCREASE IN ACCIDENT RATE AND HEALTH RISKS IN CHINA

According to Chinese Ministry of Labour, 519 miners were killed in industrial accident during 1991. At a press conference held in Beijing in December 1992, the labour vice minister admitted that most of the mines ran by private enterprises operated with below safety standards around 70% of the 235,000 miners in China are privately owned. In November 1992 report the Vice Minister of Health reported to National Assembly representatives that Workers for foreign-owned companies are at great risk of acute industrial poisoning. The government has failed to set the commitment of foreign investors to implement safety measures. In the first half of 1992, 81 workers of three toy factories in Zuhai became sick after being exposed to provision gas. Another 42 garment factory workers were poisoned by inhaling toxic chemicals in Dalian (Northeast city of China).

Wong Wai Ling

NEW LINK BETWEEN NUCLEAR INDUSTRY AND CHILD CANCER

New evidence that children are at greater risk of developing leukemia if their fathers are exposed to radiation through working in nuclear industry has been recently revealed by Scientists. They found a higher rate of leukemia among children whose fathers were employed at the atomic weapons establishments at Aldermaston and Burghfield, near Reading (UK), than among other children.

The results are similar to those an earlier study of children whose fathers worked at the Sellafield nuclear plant in Cumbria. The study done by Professor Martin Gardner, Prof. of Med., at Southampton university found that children of fathers exposed to radiation while working at Sellafield in the six months before conception were at greater risk of developing leukemia.

It suggested that radiation level precisely considered safe may have caused a mutation in the father's sperm which caused disease to develop in their children.

Pioneer, March 19

THE PRIZE OF IMMIGRANTS/WORKERS LIFE IN JAPAN

According to a theory favoured by Japan's judicial system, the amount of compensation is calculated according to the gross national product of the migrant worker's country. Most of the workers from foreign land are employed in the small factories. Japanese workers do not attracted towards these factories due to dangerous, dirty and demanding working conditions. Recently a Bangladeshi worker Mohammed Rahim lost three fingers of his right hand and according to the Ministry of Labour standards be lost 45 percent of his labour capacity. Then the case came to court the judge expressed his vision that the amount of compensation for Arvin should be based on his wage back home in Bangladesh which comes one percent of the rate.

Moneksi Ito, Japan Times Weekly 2, January 1993

WHIN: Spring 1993
RISKS IN CHEMICAL INDUSTRY

Pvt. Ltd. 66, Janpath, New Delhi - 110 001.

This book is written with the objective of filling up the gap of growth of chemical industry in one hand and the lack of information available about the hazards connected with these units. An attempt is made in this book to present and analyse comprehensive information about the safety of chemical units located in an area called SITC. Ankleshwar (Gujarat). This book is based on the survey initiated by the Gandhian Labour Institute (Ahmedabad).

SILICA AND SILICOSIS

This booklet on 'Silica & Silicosis' by Indira Chakraverty is a companion study to earlier work done by Centre for Education and Communication (New Delhi) on the conditions of quarry workers in Delhi.

Published by Centre for Education & Communication,
F-20, Jangpura Extension, New Delhi - 110 014.

STATE OF INDIA'S HEALTH

VHAI

This collection of essays on the state of India's Health is the first of its kind in the country. Written in a lucid and cogent style and dramatically illustrated, this volume looks at 'Health' from a broader perspective concentrating primarily on preventing rather than creative care. A valuable and timely collection of articles that attempts to assess the impact of socio-economic developments on people's health, the reach and effectiveness of existing health services and the role of the government and NGO's in the field.

VHAI, Tong Sristha Bhawan,
40, Institutional Area, New Delhi-110 016.

BEHIND THE INDUSTRIAL SMOKE SCREEN


The citizens committee on industrial unrest in Bhilai toured the Bhilai industrial belt for five days in November 1992. The purpose of the visit was to probe into the 16 months long industrial turmoil such has affected the life of almost one lakh workers employed as contract workers in privately owned ancillary and auxiliary industries of the Public Sector BPS.

Rs. 20/- contribution.

D. Thankappan, Convener
Solidarity Comm. In Support of Chattisgarh Workers Struggle, 45 Sainik Farms
Khanpur, New Delhi - 110 062

Society for
PARTICIPATORY RESEARCH IN ASIA (PRIA)
42, Tughlakabad Institutional Area
New Delhi - 110 062

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