INDIAN PATENT LAWS

VIS - A - VIS

PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY

INTRODUCTORY PAPERS VOLUME - II

CONTENTS

FORUM FOR PRESERVATION OF INDIAN PATENT LAWS
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INTRODUCTORY PAPER NO. I

Telex C/o. 011-74538 AIMC

Phone : 437 52 79

Pesticides Formulators Association Of India

SSI (REGD)

REGD. OFFICE : NEAR SAKI NAKA POST OFFICE, VIHAR LAKE ROAD, SAKI NAKA, BOMBAY-400 072.

Admn. Office : B-4, Anand Co-op. Housing Society, Sitladevi Temple Rd., Mahim (West), Bombay-400 016.

Ref. No. :PARIS/CONVN/PTNT/ACT

Date : August 26, 1988

To
Hon'ble Prime Minister,
Shri.Rajiv Gandhi,
10 Race Course Road,
NEW DELHI 110001.

Sub PATENT FARCE
Times of India NewsItem, New Delhi 28th July World Accord on Patent Protection urged, for amendment in existing Indian Patent Act 1970 for signing Paris Convention in International Patent Act which will result in Indian Chemical Industry to sign it's own death warrant with a smile.

Dear Sir,

We understand that Govt.of India has been approached by 95 member countries of the general agreement on tariffs and Trade (GATT) and they are pressurising Govt.of India to sign Paris Convention, which will result in amendment in Indian Patent Act 1970 and if govt.agrees to the same, then it means Indian Pesticide Industry is being asked to sign it's own death warrant with a smile. In simple terms, the Paris Convention, which governs patent laws in 96 countries operates as a structure designed to ensure and perpetuate the monopoly and stranglehold of major patent holders, mostly from the advanced Western nations. In theory, it 'Protects' the 'intellectual property' of inventors. But the era of the single inventor went out with the Victorian age, and holding the stage now are rapacious multinationals which have established themselves as supra-government at the global level.

The Indian Patent Act has ensured lower prices of medicines in India, compared to Western countries which are members of the Paris Convention. In a comparative study of the retail price of 54 drugs, it was observed that world prices of most of these drugs were 100-200 percent higher than the prices in India. Today, the per kilogram cost of bulk drugs like Temoxifen and Tobramycin is US $ 3,000 when purchased from non-patented countries. If India were to purchase the same from Patented Countries - which she would haveto on acceeding to the Paris Convention - they would cost US $ 15,000 for just one kilogram.

The prices of crucial food, drug and medicinal products would shoot through the roof of Indian purchasing power. A single medicinal product like Cephalexin (500mg) could cost as much as 2,903 per cent more than what it does now.

An immeasurable array of Indian Industries would suffer grievous damage, if not total shutdown, through the agency of their own legal system. In short, a return to colonial structures operating against Indians in their own country.

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Ref. No. :

Date : 26.8.88

Oddly enough, the protagonists of the Convention in India are trying to use the argument that when communist nationals like the USSR can become members of the Paris Convention, so can India. There is something ridiculous about the champions of 'free enterprise' and market economy touting the communist nations as medels. The analogy is nevertheless utterly bogus.

Socialist states have nothing to lose by being party to the Convention. Infringement of patent rights by them can result in no retribution since their judicial structures are based on the antithesis of proprietary rights. This is obviously not the case in India. Besides, would those offering the membership of 11 socialist states as an excuse, be prepared to emulate the other features of these nations-such as the abolition of private ownership of the means of production ?

A corollary to this argument, recently advanced in the edit page of The Times of India, is that when as many as 96 countries have signed, including nations with an advanced industrial base, why not India? Firstly, the numbers logic is in itself of dubious virtue. The large number of nations which have signed the Non-Proliferation Treaty (NPT) hasnot led to India doing the same-and correctly so. Besides, which are the countries that make up these numbers?

We also like to put forward our following views, which you are requested to consider before taking any decision in this matter. We are strongly against signing of Paris Convention and any change in Indian Patent Act, 1970.

1) Present Patent Act 1970:

In India under the present Patent Act no product patent is granted for products relating to medicines, food and chemicals. It is also clarified that chemicals includes alloys, optical glass, semi-conductors and inter metallic compounds which are produced by chemical process. This Act has in the past helped in area of medical health and also in agriculture.

The Argument that, because no patent is available of Agricultural chemicals, is coming in the way of bringing new products is absolutely incorrect. As a matter of fact today India has developed enough expertise to develop any new chemical without the help of foreign technicians. This has been achieved only because the product patent and protection was not given to new products in India. It has been proved that India can produce any new agrochemicals (Pesticides) of better qualityand much cheaper than multinational companies who claim their patents.

The poorest farmers in the world are in India andto get a better output of the agriculture produce we need more pesticides which are cheaper and within the reach of the poor farmers of India.

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Whenever there is a monopoly of pesticides, it has been noticed that multi-national companies exploited the situation. We have examples of many pesticides like Fenvalerate, Cypermethrin, which when they were imported were very expensive, but after Indian companies have started manufacturing and supplying to the Indian farmers and exporting, these multinational companies have reduced their price to nearly 1/3rd or 1/4th of their earlier selling price in the world.

In some of the pesticides, we are told that India has done great service to the developing countries (Mexico, Pakistan, etc) by offering at reasonable price.

It has been noticed that even in other countries where there is no patent, these multinational companies are having a cartel and exploiting these poor farmers in the developing countries. We can give a number of examples, in countries like Pakistan, Mexico and Africa, they are selling these pesticides at 4 times the export price to other countries. They have cartels and monopolies.

If we give a patent protection to some of the big multinational companies, there is avery big risk that the situation may be exploited by them. There are number of exampleswhere a number of multinational companies have been caught exploiting the monopoly and charging exhorbitent price to the customers. Some of the leading companies in U.K., Switzerland and USA have paid heavy penalties because they were caught over charging the consumer.

If Patent protection is given to them, these big companies are bound to exploit the poor Indian farmers. In Western countries there are systems by which they can check and punish the guilty, but in India we may find it very difficult to punish the exploiting companies as our administration is not strong enough to catch them. Our MRTP doesnot provide penalties for cartel. They can only order them not to do it again.

2) Fair Competition to make product available at the right price.

At the moment in absence of product patent there is healthy competition amongst Technical Grade pesticide manufacturers,manufactured by Indian Chemical Industries with multinationals operating in India. The moment any new compounds are manufactured in the world and are likely to be introduced in India, Indian companies are capable to produce the said technical grade pesticides within given time of 6 to 12 months. For e.g. Synthetic Pyrethroid such as Fenvalerate Technical, Cypermethrin Technical, Decamethrin Tech,Isoproturon (Herbicide), Phorate, Endosulfan. Due to fair competition Fenvalerate 20% EC when it was introduced to the farmers in Ind it was sold in 1985 at approx. Rs600/- per lit, when there was hardly 1 to 2 manufacturers of thesaid commodity. During the process of time, many Indian companies started manufacturing said product and price was brought down to 185/- to 200/- rupees per lit.. If required, we can produce necessa

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documentary evidence and as you know, in last 3 to 4 years cost of all inputs, govt. taxes, packing material and wages have gone up whereas the cost of Fenvalerate has gone down which itself is self explanatory to our strong case to have fair competition in the market by not patenting the product and our present patent act doesnot require any amendment.

3) Grant of Patent Product.

If any product patents are granted it will be harmful to the farming community as there will be one source of supply for 20 years (Patented period) and manufacturer will definitely have monopoly and they will charge any price which they like. It will also result in monopoly and restrictive trade practice which govt.of India do not promote or agree.

4) Role of National Chemical Laboratory, C.S.I.R. & Regional Research Laboratory :

As we have already advanced in Chemical Industry, today our technocrats and scientists are in position to manufacture a particular pesticide and make it available to the farmers. Even our National Chemical Laboratory, Regional Research Laboratory, Hyderabad, Jorhat, are developing a process to manufacture a new pesticide and if the product patent is given then there will be a definite end to the use of all the Indian talents and scientists who would come to a grinding hault. To give an example, when Fenvaleratewas manufactured by one Company, and imported the prices were about Rs.600/- to 650/- per litre and today with fair amount of competition and more than one manufacturer making Fenvalerate the price has come down to Rs. 185/- to Rs.200/- per lit. that means a saving of 100% to the farmers.

As you know R.R.L. and N.R.D.C. are capable of developing any technical knowhow for chemicals and technical grade insecticides within given time of 5 to 12 moths for any new product. For your ready reference our govt. laboratory R.R.L. has provided technical knowhowto the folloing multinationals.

1) M/s Hindustan Ciba Giegy.
2) M/s. National Organic Chemicals Industries Ltd, formerly (Shell International)

and many othes which includes also Indian companies like M/s. Sudarshan Agrochemicals Ltd, M/s Bharat Pulverising Mills, M/s. Excel Industries Ltd. If any change in Patent Act or patent protection of 20 years are given then this laboratory will not be able to contribute any development to chemical industries in India. Scientists employed in the above laboratories and entire

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infrastructure which has been created by great efforts, in a period of time, will be totally a waste as multinational industries new product in the country will be protected for 20 years which will not promote this laboratory to develop any knowhow for Indian manufacturers or entrepreneurs.

5) Violation of Patent Act by multinationals in India as per the will and wish.

Though these multinational companies are clamouring for changing the Indian Patent Law, at the same time, they are taking the full advantage of the Indian laws and are formulating and marketing a patented product. To give an example, BASF, BAYER, SANDOZ are marketing Synthetic Pyrethroids like Cypermethrin, because the Indian Patent law allows while in their own country they are not marketing. All the multinationals use patent act as per the suitability of their production line as well as provide all over the world. Wherever they see good market they patent product and they exploit the market with profit margin more than 500% and above on the newly introduced product. So it is not atall in the interest of the country to have Patent Actand to join Paris convention. There is nc need to amend 1970 Indian Patent Act.

6) Disadvantage of patented product Thimet 10-G case study of U.S.A.

Let us consider Thimet 10-G (Phorate Granules) which are very effective granular insecticide for rice, cotton, vegetables and today with Patent U.S.A. only 1 company is marketing Thimet granules and are charging their own price whilst in India there are 3 manufacturers of technical and more than one dozen formulators by which prices have come down and the farmer is getting Phorate Granules at a very reasonable rate.

7) Huge drain of Foreign Exchange :

If Patent Act is amended and Paris Convention is signed it will give protection to the foreign & multinational manufacturers for 20 years and it will result in heavy drain of foreign exchange by way of imports and royalties on patented product which would inflate nation's import bill to unimaginable proportions. The monopolistic rights it would confer on the multinationals of developed nations which use technology as an instrument of both income and exploitation would liquidate the present multichannel imports option that the country exploits, and force the purchase of products from patented countries, very often at prices as much as 500 percent higher than those currently obtaining.

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10) UTILISATION OF SPARE CAPACITY IN INDIA WILL BE STOPPED IF PARIS CONVENTION IS SIGNED.

As Govt.of India knows very wel' that the chemical industry and Pesticide industry is over licenced and are in excess throughout India due to which govt.of India has stopped new manufacturing licence under D.G.T.D. or in small scale sector since 1973 onwards. In many sectors industries are having spare capacity. At the moment in S.S.I. sector capacity utilisation is hardly 30% to 40% in respect of installed production capacity. Many industries are striving to utilise their entire installed capacity to produce more which helps them to make product available to the Indian farmers at reasonable and right price. If, govt. of India by mistake signs Paris Convention which results in amendment of Patent Act which will simultaneously result in amendment of Patent Act which will simultaneously result in huge generation of idle capacity because once the product patent are granted there will not be any 2nd manufacturer till patent expires which in this case will be 20 years., which means if any multinational industries enter patented product in India no Indian manufacturer can develop necessary technical knowhow to produce the same for 20 years under the said patent protection. As we have huge infrastructure with C.S.I.R., N.C.L. and various R & D activities are carried out by chemical industries to develop the product knowhow the same will be completely ruined and will have to be scrapped as under Patent Act no one can manufacture till Patent expires. All these factors will create huge non-utilised spare capacity and industry will definitely start losting their production and will lead to great financial loss.

11) Signing of Paris Convention and amendment in Patent Act will result in monopoly and restrictive trade practice by the multinationals under Patent Protection.

At the moment in absence of the product patent there is healthy competition amongst technical grade manufacturers and also in chemical industries and pharmaceutical industries with multinationals operating in India the moment any new compounds are manufactured in the world and are likely to be introduced in India Indian companies are capable to produce the said Technical grade pesticides within given time of 6 to 12 months. For e.g. Synthetic Pyrethroid such as Fenvalerate Technical Cypermethrin Technical, Decamethrin Tech, Isoproturon (Herbicide), Phorate, Endosulfan as mentioned previously. So there is no need to sign Paris Convention.

12) Foreign Exchange earnings and Export will be hampered due to change in Patent Act or signing Paris Convention.

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We also like to state that if the product is registered under protected registration and if the product is registered under Patent Act by multi-nationals it will definitely monopolise the entire manufacturing and marketing of the said product, and will not export the said items from our country, the reason being that their principals abroad meet the export requirement of the said product and they will not allow any of their subsidiaries or branches to export the products from India. This type of protected registration will therefore completely stop the export of pesticides and not a single Indian company or small scale industry will be able to export any pesticide for a period of 20 years under Patent Act and Paris Convention, resulting in decline in export earnings and foreign exchange. So we strongly protest against the said Paris Convention and amendment of the Patent Act.

In absence of the Patent Act all indigenous manufacturers and exporters are developing various technology to produce the product manufactured by multinationals in India and today's industries export by indigenous manufacturer is more than 1500 crores in chemicals, out of which 60 crores in pesticides compared to the multinationals which are hardly exporting 3 to 4 crores in general currency area. The entire export of the country will collapse if Patent Act is amended or Paris Convention is signed by India.

13) Restriction on Import of Indian Industries in case of Patented product under Paris Convention.

At the moment Indian chemical industries, Pharmaceutical industries and pesticide industries are allowed to import their raw materials as well as various inputs in manufacturing activities. The moment Patent Act is amended the above import will go from Indian citizen and industry. Once the product is patented by multinational no other Indian company will be able to import the said product or market the said product in domestic market. The product imported or manufactured under Patent by multinationals will be monopolised to exploit the market by charging higher prices to the consumer because there will not be any local competitor from any sector. The consumer will have to pay the price decided by the multinationals as they will be alone in the field and their will not be any fair competition and the consumer will have to pay the price much higher and govt. will not be able to help the citizens of India to pay fair price for their industries.

Our Association is representing around 180 pesticide manufacturers all over the country and we have put forward our views to alert the citizens of India and Indian industries and various govt. departments and Ministries those who are directly or indirectly involved in the amendment of the Patent Act as well as signing of Paris Convention.

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Before they take any decision our views must be taken into consideration and we feel there is no need of amending present Indian Patent Act 1970 and our country should not join Paris Convention, keeping inview the tremendous amount of talent, intelligence and ability which Indian citizens possess. We can generate our own technology and lead the country to progress.

Thanking you,

Yours faithfully,
for PESTICIDES FORMULATORS ASSOCIATION OF INDIA.

(PRADEEP P.DAVE).
PRESIDENT.

19/pmd

P.S. We request your valued office to give us suitable time to hear us personally. Our Managing Committee members seek your valued time for 15 to 30 minutes to express their views in person.

We also enclose herewith xerox copies of the articles published in Times of India for Paris Convention and Patent Act.

Encl: 1) Xerox copy of World Accord on Patent Protection urged.
2) xerox copies of three more cuttings of Times of India.

INTRODUCTORY PAPER I (a)

Food Processing Industry

— DATA —

Table I
Current Production of Basic Food and Future Requirements

(Quantity in million tonnes)

Food material	Estimated production 1985-86	Requirement in 2000 AD	Additional requirement
Cereals	137.00	176.35	38.85
Pulses	12.96	19.07	6.11
Oilseeds	13.00	36.00	23.00
Sugar and gur	17.40	13.67	
Milk	38.00	89.25	51.25
Meat	1.26	5.40	4.14
Fish	2.90	5.40	2.50
Fruit	23.50	36.00	12.50
Roots and tubers	19.20	18.00	
Other vegetables	14.80	19.80	5.00

Table II
Production Trend for Some of the Processed Foods*

Items	Unit	Production in 1982	Installed capacity for 1982	Number of units in 1982	Projected production in 2000 AD
Biscuits	('000 tonnes)	125.0	147.0	33	301.0
Confectionery	('000 tonnes)	22.5	35.9	22	60.0
Bread	'000 tonnes	152.0	132.0	21	357.0
Baby food	'000 tonnes	43.9	124.0	15	460.0
Soft drinks	million bottles	1650.0	2070.0	45	4660.0
High protein foods	tonnes	6.0	13.6	9	20.0

* The data presented here are mostly from the organised sector.

Table III
Growth of Some Selected Packaged Food Products

(Rs in million)

Product group	1985	1986	1987
Biscuits*	1155.0	1679.0	2340.0
Packaged ghee	423.0	465.0	698.0
Non-aerated soft drinks	107.5	124.4	227.0
Concentrated powders	68.5	109.0	200.0
Baby foods	1920.0	1983.0	1537.5
Texturised food products	38.0	69.5	90.0
Vermicelli	52.0	124.5	225.5
Bread spreads	120.0	197.0	266.0
Chocolates/eclairs	335.0	478.0	685.0

EXPORT

Table IV
of Selected Processed Foods

(Rs million)

Year	Vegetables and fruits@	Meat and meat preparations
1976-77	570.7	208.6
1977-78	478.2	251.7
1978-79	631.4	348.4
1979-80	635.4	414.3
1980-81	795.8	555.0
1981-82	1060.0	795.5
1982-83	1535.0	804.8
1983-84 (P)	1551.6	683.2
1984-85 (P)	1617.8	759.8

@ Other than cashew kernels
P = Provisional

Table V
Bakery Industry: Current Trends

Product	Installed capacity (tonnes)		Production (tonnes)		Capacity utilisation (per cent)	
	1986	1987	1986	1987	1986	1987
Biscuits	47,601	47,601	45,959	46,192	96.5	97.0
Bread	48,600	48,600	51,019	48,404	105.0	99.5
Cakes	1863	1863	1128	1008	60.5	54.1

this industry. The panel suggested complete decontrol and deregulation of this sector and also sweeping changes in the existing taxation, import and marketing policies. Declaring the processed foods as goods of interstate importance, the panel felt that these foods should have free and unrestricted production.

The central Ministry for Food Processing Industry has sought as many as 71 concessions to give fillip to food processing. These incentives seek to make food processing industry's products competitive in the international market. These include restructuring of

Table VI
Comparative Nutritive Values

Product (per 100 gms)	Energy (k. calories)	Carbohydrates (gms)	Fats (gms)	Proteins (gms)
Biscuits (sweet)	534	71.9	32.4	6.6
Bread (white)	245	51.9	0.7	0.7
Kheer	176	9.6	12.2	6.9
Egg	173	—	13.3	13.3
Shrimp	349	—	8.5	68.1
Banana (ripe)	116	27.2	0.3	1.2

Source: National Institute of Nutrition, Indian Council of Medical Research.

INTRODUCTORY PAPER

DATA - PHARMACEUTICALS INDUSTRY II (b)

ANNEXURE-I

PRODUCTION OF BULK DRUGS IN INDIA

Name of the Drug	Unit	1984-85	1985-86	1986-87
1. ANTIBIOTICS:				
Penicillin	MMU	221.68	260.11	240.00
Streptomycin	T	235.06	188.32	200.00
Chloramphenicol	T	78.53	79.75	75.00
Chloramphenicol palm.	T	10.69	8.58	10.00
Tetracycline	T	227.04	227.39	210.00
Oxytetracycline	T	135.60	142.14	70.00
Ampicillin	T	104.69	121.18	150.00
Erythromycin	T	19.11	51.48	40.00
Amoxycillin	T	1.58	3.97	10.00
Doxycycline	T	4.32	9.98	8.00
Gentamycin	Kg.	541.25	166.47	
2. SULPHA DRUGS				
Sulphamethoxazole	T	539.08	562.78	500.00
Sulphadimidine	T	313.60	487.58	375.00
Sulphacetamide sodium	T	47.46	33.92	35.00
Sulphadiazine	T	30.81	18.85	45.00
Phthalyl Sulphathiazole	T	9.94		
Sulphamoxozole	T	114.32	103.66	100.00
Sulphasomidine	T	55.77	75.48	40.00
Sulphaphenazole	T	40.60	54.62	40.00
Sulphaguanidine	T	256.72	208.06	150.00
Sulphanilamide	T	30.89	7.03	2.50
3. VITAMINS				
Vitamin A	MMU	60.58	61.03	65.00
Vitamin B1	T	49.22	58.41	45.00
Vitamin B2	T	18.49	24.04	10.00

Vitamin B12	Kg	132.88	176.70	195.00
Vitamin C	T	716.23	651.26	800.00
Vitamin D6	Kg	236.20	348.67	400.00
Vitamin E	T	58.48	67.05	60.00
Vitamin K	T	0.89	0.41	
Vitamin P	T	2.14	4.74	3.00
Folic acid	T	7.25	7.65	7.50
Nicotinic acid	T	7.51	11.85	10.00
Nicotinamide	T	137.59	141.31	200.00
4. ANALGESIC & ANTIPYRETICS				
Analgin	T	335.87	208.32	150.00
Aspirin	T	1061.33	1514.3	2100.00
Phenyl butazone	T	62.93	53.61	40.00
Oxyphenbutazone	T	46.40	26.63	10.00
Pethidine	Kg	385.00	314.00	375.00
Ibuprufen	T	51.01	99.63	80.00
5. CORTICOSTEROIDS *				
Dexamethasone	Kg	214.06	248.99	250.00
Betamethasone	Kg	732.84	751.37	800.00
Prednisolone	Kg	1682.00	1721.00	2000.00
6. ANTI T.B. DRUGS				
PAS & its salts	T	119.07	106.98	90.00
Isoniazid	T	127.70	144.34	160.00
Thaicetazone	T	20.39	19.22	35.00
Ethambutol	T	214.06	300.72	350.00
Pyrazinamide	T	2.62	3.21	3.00
7. ANTIMALARIALS				
Chloroquin	T	149.55	184.99	210.00
Amodiaquin	T	26.41	34.50	45.00
8. ANTI-DYSENTERY DRUGS				
Metronidazole	T	295.16	318.88	350.00

Tinidazole	T	13.67	22.38	45. 0 0
Diloxanide Furoate	T	28.27	22.94	15. 0 0
Iodchlorhydroxquinoline	T	151.10	141.0	190. 0 0
Diiodohydroxyquinoline	T	3.22	4.98	4.50 T
Intestopan	T	35.82	69.98	40.00
9. ANTI-DIABETICS				
Chlorpropamide	T	20.97	19.85	30. 0 0
Tolbutamide	T	28.76	15.33	25. 0 0
Glybenclamide	T	0.97	0.86	2. 0 0
Insulin	MU	2541.00	2730.00	2500.00
10.CNS STIMULANTS				
Caffiene	T	5.88	17.82	18. 0 0
Nikethamide	T	0.41	1.58	0.10
11.DIURETICS				
Frusemide	T	6.73	7.06	6.00
12.ANTI-ASTHMATICS				
Ephedrine	T	6.19	14.07	11. 0 0
Salbutamol	T	0.51	0.85	1. 5 0
Terbutaline	T	0.37	0.40	0.30
13.CARDIOVASCULAR DRUGS				
Propranolol	T	5.37	7.89	4. 5 0
Xanthinol Nicotinate	T	15.08	20.74	16. 0 0
Methyl dopa	T	19.04	31.79	35. 0 0
Digoxin	Kg	17.13	28.93	35.00
14.ANAESTHETICS				
Lignocaine/xylocaine	T	9.31	8.90	7. 0 0
Procaine	T	32.40	24.83	50. 0 0
15.ANTI-HISTAMINES				
Pheniramine Maleate	T	18.61	19.50	20. 0 0
Diphenylhydramine	T	11.56	13.13	12.00
6.ANTI-HELMINTICS				
Piperazine & salts	T	5.20	22.10	

Mebendazole	T	9.16	23.71	19.00
17.TRANQUILISERS & SEDATIVES				
Phenobarbitone	T	5.09	12.23	15.00
Diazepam	T	5.73	5.11	9.00
18.ANTI-FILARIALS				
DEC Citrate	T	21.94	11.84	16.00
19.ANTI-LEPROTIC				
DDS	T	7.25	7.93	35. 0 0
Clofazimine	T	1.47	2.50	0.50
20.IMMUNOLOGICAL AGENTS				
Triple vaccine	KL	10.84	11.74	7. 5 0
Tetanus antitoxin	MU	8291.02	7372.98	9000. 0 0
Diphteria antitoxin	MU	962.58	630.20	400. 0 0
21.OTHER ANTIBACTERIALS				
Trimethoprim	T	46.53	59.54	90.00

ANNEXURE-II

PROJECTED GROWTH OF THE PHARMACEUTICAL INDUSTRY

No.	Name of the Drug	Unit	Estimated Demand By 1990	1995	2000
A.	**SYSTEMIC ANTIBACTERIALS**				
1	PENICILLIN (as drug)	MMU	338.0	338.0	338.0
	(as intermediate)		1532.0	3323.0	5863.0
	(Total)		1870.0	3661.0	6201.0
2	TETRACYCLINE	MT	221.5	190.2	155.1
3	OXYTETRACYCLINE	MT	115.2	98.9	80.7
4	DOXYCYCLINE	MT	4.4	3.8	3.1
5	ERYTHROMYCIN	MT	70.9	99.4	126.9
6	CHLORAMPHENICOL	MT	234.5	271.8	271.8
7	AMPICILLIN	MT	394.8	635.8	934.2
8	AMOXYCILLIN	MT	74.6	120.1	176.5
9	CEPHALEXIN	MT	211.9	646.7	1300.7
10	CLOXACILLIN	MT	31.9	42.7	51.9
11	CARBENICILLIN	KG	600.0	600.0	542.4
12	GENTAMICIN	MT	4.8	11.0	19.4
13	SULPHADIAZINE	MT	75.0	67.8	55.3
14	SULPHADIMIDINE	MT	400.0	361.6	294.8
15	SULPHAMOXOLE	MT	59.7	65.9	65.9
16	SULPHAMETHOXYPYRIDAZINE	MT	13.3	11.4	9.3
17	SULPHASOMIDINE	MT	53.2	45.7	37.3
18	SULPHAPHENAZOLE	MT	50.0	45.2	36.9
19	TRIMETHOPRIM	MT	221.5	310.7	396.5
20	NITROFURANTOIN	MT	0.9	0.8	0.6
21	NALIDIXIC ACID	MT	23.8	31.8	38.8
22	CEPHALORIDINE	MT	4.2	12.8	25.8
23	SULPHAMETHOXAZOLE	MT	1107.3	1553.0	1982.1
B	**ANTI-TUBERCULARS**				
24	INH	MT	374.1	602.5	927.0
25	PAS	MT	53.1	41.1	24.3

26	THIACETAZONE	MT	56.3	56.3	56.3
27	ETHAMBUTOL	MT	405.2	517.1	571.0
28	PYRAZINAMIDE	MT	46.3	81.6	131.4
29	STREPTOMYCIN	MT	340.4	414.1	457.3
30	RIFAMPICIN	MT	189.0	397.0	699.6
C	**ANTI-AMOEBICS/DIARROHALS**				
31	HALOGENATED OXYQUINOLINES	MT	227.9	158.5	93.6
32	METRONIDAZOLE	MT	542.8	797.6	1067.3
33	TINIDAZOLE	MT	59.2	87.0	116.4
34	DILOXANIDE FUROATE	MT	98.7	145.0	194.1
35	FURAZOLIDONE	MT	92.2	117.7	143.2
36	LOPERAMIDE	KG	500.0	669.1	814.1
37	SULPHAGUANIDINE	MT	250.0	214.7	166.1
38	PHTHALYL SULPHATHIAZOLE	MT	25.0	21.5	16.6
D	**ANTI-DIABETICS**				
39	INSULIN	MU	4243.7	7478.8	13180.3
40	GLIBENCLAMIDE	MT	3.0	6.9	13.8
41	CHLORPROPAMIDE	MT	98.7	159.0	233.6
42	TOLBUTAMIDE	MT	39.7	55.7	74.5
43	PHENFORMIN	MT	1.0	1.6	2.4
44	METFORMIN	MT	23.1	40.7	65.6
45	GLIPIZIDE	KG	600.0	1372.7	2760.9
E	**ANTHELMINTICS**				
46	BEPHENIUM HYDROXY NAPHTHO	MT	8.9	8.0	7.3
47	PIPERAZINE	MT	126.5	139.7	154.2
48	TETRAMISOLE/LEVAMISOLE	MT	18.0	24.1	30.7
49	MEBENDAZOLE	MT	62.5	100.7	154.9
50	THIABENDAZOLE	MT	0.7	0.9	1.1
51	ALBENDAZOLE	MT	2.2	3.7	6.0
52	PYRENTAL PALMOATE	MT	32.9	60.6	102.1

F	**ANALGESICS/ANTI-PYRETICS**				
53	ASPIRIN	MT	2480.2	3994.4	6433.0
54	PARACETAMOL	MT	8208.5	17240.7	34677.1
55	ANALGIN	MT	2214.5	3407.3	5006.4
56	DEXTROPROXYPHENE	MT	17.7	26.0	36.5
57	PETHIDINE	MT	1.0	1.3	1.6
G	**ANTI-ARTHRITIC DRUGS**				
58	PHENYLBUTAZONE	MT	156.0	189.8	220.0
59	OXYPHENBUTAZONE	MT	120.6	146.7	170.1
60	IBUPRUFEN	MT	328.5	751.5	1511.6
61	INDOMETHACIN	MT	5.3	7.8	10.4
62	NAPROXEN	MT	36.2	90.1	206.1
63	PIROXICAM	MT	0.8	3.0	9.1
H	**ANTI-DIURETICS**				
64	FRUSEMIDE	MT	19.7	33.2	53.5
65	HYDROCHLOROTHIAZIDE	MT	9.9	16.7	26.9
I	**ANTI-HYPERTENSION DRUGS**				
66	METHYLDOPA	MT	39.7	53.1	64.6
67	PROPRANOLOL	MT	13.9	25.6	45.1
68	CLONIDINE	KG	8.0	10.7	14.3
69	ATENOLOL	MT	2.7	5.7	10.4
70	CAPTOPRIL	MT	2.4	4.6	8.1
J	**CARDIO-VASCULAR DRUGS**				
71	DIGOXIN	KG	40.0	67.4	108.6
72	ISOSORBIDE DINITRATE	MT	8.9	14.3	21.1
73	PENTAERYTHRITOL T.NITRATE	MT	6.2	9.1	12.2
74	VERAPAMIL	MT	13.5	27.2	47.9
75	NIFEDIPINE	MT	1.5	3.4	6.9
76	DIPYRIDAMOLE	MT	6.4	8.6	10.4

77	XANTHINOL NICOTINATE	MT	23.8	31.8	38.8
78	PRENYLAMINE LACTATE	MT	1.6	2.1	2.6
K	**ANTI-PSYCHOTIC DRUGS**				
79	CHLORPROMAZINE	MT	9.5	12.7	15.5
80	IMIPRAMINE	MT	4.5	10.3	21.6
81	AMITRIPTYLINE	MT	4.9	10.3	19.8
82	TRIFLUOPERAZINE	MT	4.0	6.7	10.9
83	DIAZEPAM	MT	14.8	24.9	40.2
84	CHLORDIAZEPOXIDE	MT	3.5	5.1	6.9
85	MEPROBAMATE	MT	5.3	7.8	10.4
86	LORAZEPAM	MT	0.1	0.3	0.6
87	DOXEPIN	MT	1.9	4.7	9.9
88	NITRAZEPAM	MT	0.6	1.4	2.9
89	TRIMIPRAMINE	MT	2.1	4.8	10.1
L	**ANTI-ASTHMATIC**				
90	AMINOPHYLLINE/THEOPHYLLIN	MT	293.5	431.2	577.1
91	EPHEDRINE	MT	67.1	77.8	90.2
92	TERBUTALINE	MT	0.8	1.3	2.0
93	SALBUTAMOL	MT	2.5	4.0	6.2
M	**ANTI-HISTAMINE**				
94	PHENIRAMINE MALEATE	MT	28.6	40.1	51.2
95	CHLORPHENIRAMINE MALEATE	MT	25.2	37.0	51.9
96	DIPHENHYDRAMINE	MT	21.3	27.2	33.1
97	PROMETHAZINE	MT	4.3	5.5	6.7
98	PHENYLEPHEDRINE	MT	5.0	7.3	10.3
N	**CORTICO-STEROIDS**				
99	DEXAMETHASONE	MT	0.9	1.3	1.8
100	BETAMETHASONE	MT	1.4	2.1	2.8
101	PREDNISOLONE	MT	5.6	7.1	8.7
102	TRIAMCINOLONE	MT	0.2	0.2	0.2

103	BECLOMETHASONE	KG	9.0	13.2	17.7
O	**ANTI-LEPROSY DRUGS**				
104	DAPSONE	MT	88.6	88.6	68.6
105	CLOFAZIMINE	MT	3.5	5.6	9.1
P	**ANTI-FILARIAL DRUGS**				
106	DCC	MT	79.7	122.6	188.7
Q	**LOCAL ANTI-BACTERIALS**				
107	FRAMYCETIN	MT	7.3	14.1	24.8
108	NITROFURAZONE	MT	2.0	3.2	4.7
109	NEOMYCIN	MT	15.9	24.5	35.9
110	BACITRACIN	MT	104.1	191.8	338.0
111	SULPHACETAMIDE	MT	60.3	69.9	77.2
R	**ANTI-MALARIAL DRUGS**				
112	AMODIAQUIN	MT	18.4	14.2	11.0
113	CHLOROQUINE PHOSPHATE	MT	250.0	226.0	204.3
114	PRIMAQUINE	MT	0.3	0.2	0.2
115	PYREMETHAMINE	MT	2.8	3.4	3.8
S	**ANAESTHETICS**				
116	PROCAINE	MT	89.6	98.9	109.2
117	LIGNOCAINE	MT	17.9	20.8	24.1
118	ETHER	MT	281.5	295.9	295.9
119	THIOPENTONE	MT	1.8	2.0	2.2
T	**VITAMINS**				
120	VITAMIN B1	MT	145.3	158.1	215.6
121	VITAMIN B2	MT	70.9	74.5	99.7
122	VITAMIN B6	MT	92.1	99.7	135.3
123	VITAMIN C	MT	1487.5	1571.1	2122.4
124	VITAMIN A	MMU	117.4	124.0	170.7

125	VITAMIN K	MT	115.7	195.0	286.5
126	FOLIC ACID	MT	13.3	14.0	18.7
127	NICOTINAMIDE	MT	310.0	325.8	436.0
128	VITAMIN B12	KG	270.0	270.0	270.0
U	**ORAL CONTRACEPTIVES**				
129	NORETHISTERONE	MT	0.5	0.9	1.9
130	NORGESTROL	MT	0.2	0.3	0.6
V	**ANTI-EPLEPTIC DRUGS**				
131	PHENOBARBITONE	MT	21.3	27.2	33.1
132	DIPHENYL HYDANTOIN SODIUM	MT	15.9	22.3	28.5
133	CARBAMAZEPINE	MT	19.7	31.7	46.6