found any significant differences from Western countries in respect of dosage, therapeutic response or side or toxic effects, except that the effective dosage tends to be about 80% of that used say in the United Kingdom; this is understandable because of the proportionately colour body weight of the Chinese. I mention all this in view of claims advanced in some quarters of large cross-cultural differences in psychotropic drugs dosage and response which are not solely determined by differences in prescribing tablets.

In conclusion, the main differences in the useof psychotropic drugs between Hong Kong and Western countries is found not among psychiatrists but among general practitioners. The latter in Hong Kong who are in the front line of defence, should play a greater role in the treatment of psychological disorders but before they do so, they should be better educated in the use of psychotropic drugs and in psychiatric practice generally.

INDONESIA

By B. SADONO

Department of Psychiatrty, University of Indonesia, Jakarta, Indonesia.

The speed of scientific development in this modern age has reached such a stage where the most up-to-date information has not only become a pressing necessity but an indispensable basic need. Although medical authorities in Indonesia have worked out programmes for the nation's second Five Year Development Plan (1974–1979) and psychiatrists active in mental health planning have attempted to look into the future as far as 30 years ahead, the aim of this presentation is only to focus on actual facts in psychotropic medication which existed during 1970–1973.

Psychotropic Medication in Indonesia was only known in 1956, when Chlorpromazine was introduced. I wish to refer to a report which describes the status of psychotropic medication in Indonesia until 1970*

The number of psychotropic drugs now available has become numerous and is expected still to increase.

Drugs like **Librium (Chlordiazepoxide)** and **Valium (Diazepam)** stimulated the development of more systematic psychosomatic approaches among Indonesian physicians who previously were predominantly organically-oriented. Scientific literature provided by pharmaceutical firms was also helpful in this development. Although antidepressants were introduced much later, Amitriptyline (Laroxyl^{R}, Tryptanol^{R}, or Elavil^{R}) are now widely used. There is, however, still a relative unfamiliarity with the somatic manifestations of depressions especially among general practitioners and non-psychiatric specialists. LSD is not used therapeutically.

Although psychotropic drugs are not processed or developed in Indonesia, most drugs like *chlorpromazine, reserpine, meprobamate, chlordiazepoxide and diazepam* are imported as bulk materials. There are many pharmaceutical firms active in manufacturing tabletted form of such substances. No basic drug research is carried out in Indonesia; on the other hand, clinical drug trials were carried out in a number of medical centres:

a. Jakarta: under the auspicies of The Directorate of Mental Health, Ministry of Health, and The Department of Psychiatry, University

* The Indonesian population estimated at 120 million is served by 41 mental hospitals and Department of Psychiatry which are located in the main cities in Java, Bali, Sumatra, Kalimantan, Sulawesi and Irian Jaya.
There are 3 central state mental hospitals (all located on the island of Java), with an average bed capacity of 1,000. There are also about 20 regional state mental hospitals with an average bed capacity of 200, most of them on the other islands. A few general hospitals have psychiatric facilities. The Department of Psychiatry of the University of Indonesia, for instance, is part of the General Hospital in Jakarta.
The report also states that the number of certified psychiatrists in Indonesia is about 75 persons.

of Indonesia.

b. **Bandung:** under the auspicies of The Department of Psychiatry, University of Pajajaran.

c. **Jogjakarta:** under the auspicies of The Department of Psychiatry, University of Gajah Mada.

d. **Surabaya:** under the auspicies of The Department of Psychiatry, University of Airlangga.

e. **Medan:** under the auspicies of The Department of Psychiatry, University of Sumatera Utara.

A short summary of some results from these drug trials is given:

MAJOR TRANQUILLIZERS:

1. **Combination Therapy of ECT, Reserpine** and **Chlorpromazine.** With the aim ot find low-cost therapy, in 1964 a trial was done for the ambulatory treatment of functional excitement states.
2. **Thioridazine** *("Melleril"-Sandoz)*: An effective drug with mild side effects. Caution is mentioned when using high dosages (> 300 mg/day).
3. **Chlorprothixene** *("Taractan"-Roche)*: An effective drug for the treatment of psychotics. A recent trial in 8 mental hospitals in Java covering some 800 patients again reaffirmed this conclusion.
4. **Fluphenazine** *("Anatensol"-Squibb)*: A potent major tranquillizer. Caution mentioned when using high dosages (> 3 mg/day).
5. **Trifluoperazine** *("Stelazine"-Smith, Kline & French)*: This drug in many respects resembles fluphenazine. Optimal responses with psychotics can be obtained with 10–15 mg daily.
6. **Levomeprozine** *("Nozinan"-Specia)*: A major tranquillizer with beneficial effects for schizophrenics experiencing acute episodes. Side effects are rare and not severe; lowered blood pressure was mentioned as a side effect occurring during the first week of treatment. Average dosage : 50 – 150 mg daily.
7. **Haloperidol** *("Haldol". Janssen; "Serenace"-Searle)*: A major tranquillizers with mild-to-moderate side effects. Beneficial effects on paranoid symptoms and other types of distorted perceptions of thought (hallucinations and paranoid delusions). Average dosage: 1.5 to 4.5 mg/day.
8. **Thiopropazate** *("Dartalan"-Searle)*: A 'mild type' of major tranquillizer, nearly without side effects. Average dose: 20–60 mg daily.
9. **Perazine** *("Taxilan..-BYK-Gulden)*: A drug considered effective on disturbances of perception and thinking process in schizoprenia. Slight and transient undesirable concomitant effects are: drowsiness, finger tremor and decrease in blood pressure. Average daily dosage: 300–1200 mg.

MINOR TRANQUILLIZERS:

1. **Chlordiazepoxide-HCL** *("Librium"-Roche)* and **Diazepam** *("Valium"-Roche)*: The best known and most prescribed psycho-active drug by the psychiatric and non-psychiatric profession as well. Mostly used in neurotic conditions, relatively inactive for psychotic disorders.
2. **Benzodiazepine deratives** *("RO-3350 or Lexotan"-Roche)*: Good results for severe psychophysiological disorders. Lexotan seems to bring new hope in the treatment of obsessive-compulsive conditions and other severe neurosis which so far are highly resistant to drug-therapy. Side effects are not severe. Daily dosage: 9 to 30 mg.
3. **Lorazepam** *(WY-4036 or "Ativan-Wyeth)*: A potent anti-anxiety compound and welcome addition for the psychiatric practitioner. Generally, side effects are transient and human tolerance towards the drug is good. Dosage: 0.5 – 12 mg daily.
4. **Oxazepam** *("Serax"-Wyeth)*: An effective anti-anxiety agent. Daily dosage: 45 – 135 mg.
5. **Benzotamine HCL** *("Tacitin"-Ciba)*: For cases of anxiety. No serious side effects. Daily dose ranges: 15–90 mg.

ANTI DEPRESSANTS:

1. **Imipramine HCL** *("Tofranil"-Geigy)*: Effective for the ambulatory treatment of depressions.
2. **Chlorimipramine** *("Anafranil"-Geigy)*: Good results in the reactive, neurotic and atypical depressions. Side effects like insomnia, anorexia, excitement, nausea and vomiting disappear by reducing the dosage. Dosage ranges: 25–125 mg/day.

In addition to the drugs listed above, there are still some other psycho-active drugs which are not regularly available in the Indonesian market.

The increasing need for psychotropic drugs during 1970–1972 is illustrated by the figures supplied by The Directorate General of Pharmacy.

DIRECTORATE GENERAL OF PHARMACY

MAJOR TRANQUILLIZERS:	1970	1971	1972
1. **Chlorpromazine**			
Tablets	1,168,500	765,000	2,651,000
Ampoules	11,570	33,721	19,540
powder/kg	25	60	70
2. **Thioridazine** *("Melleril"-Sandoz)*			
Tablets	50,000	70,000	58,000
3. **Trifluoperazine** *("Stelazine"-Smith, Kline & French)*			
Tablets 1 mg	14,500	–	–
Tablets 5 mg	16,200	–	–
4. **Fluphenazine** *("Anatensol"-Squibb)*			
Tablets 1 mg	438,500	100,940	410,000
Tablets 2.5 mg	31,500	133,000	187,000
Tablets 5 mg	221,000	132,000	170,000
5. **Chlorprothixene** *("Taractan"-Roche)*			
Tablets	–	41,500	–
6. **Haloperidol** *('Haldol"-Janssen; "Serenace"-Searle)*			
Tablets ½ mg	–	594,000	1,111,500
Ampoules 5 mg	–	– –	2,600
7. **Levomepromazine** *("Nozinan"-Specia)*			
Tablets 25 mg	125,000	120,000	227,500
Ampoules	–	1,000	–
8. **Perphenazine** *("Trilafon."-Schering)*			
Tablets 2 mg	180,000	174,400	240,000
Tablets 4 mg	94,000	104,000	208,600
Tablets 8 mg	–	–	35,000
9. **Reserpine** *("Serpasil"-Ciba)*			
Tablets 0.1	7,500	162,500	–
Tablets 0.25 mg	60,000	100,000	–
Ampoules	150	–	–
Powder/kg	2	–	–

OTHER DRUGS AVAILABLE:

10. **Thiopropazate** *("Dartalan"-Searle)*
11. **Perazine** *("Taxilan"-BYK-Gulden)*

MINOR TRANQUILLIZER:			
01. **Chlordiazepoxide** *("Librium"-Roche)*			
Tablets 5 mg	32,000	100,000	750,000
Tablets 10 mg	99,000	–	–
Powder/kg	159,400	228,800	155
02. **Diazepam** *("Valium"-Roche)*			
Tablets 10 mg	55,000	–	–
Tablets 5 mg	217,500	120,000	200,000
Tablets 2 mg	549,000	1,600,000	1,200,000
Ampoules	4,500	37,672	–
Powder/kg	–	826,080	35
03. **Nitrazepam** *("Mogadon"-Roche)*			
Tablets	344,000	72,000	

		1970	1971	1972
04.	**Medazepam** *("Nobrium"-Roche)*			
	Tablets	276,000	184,000	3,000
05.	**Meprobamate**			
	Tablets	150,000	–	–
	Powder/kg	–	250	506
06.	**Oxazepam** *("Serax"-Wyeth)*			
07.	**Benzotamin** *("Tacitin"-Ciba)*			
08.	**Lorazepam** *("Ativan"-Wyeth)*			
09.	**Benzodiazepin** *("RO 5.3350" or "Lexotan"-Roche)*			

ANTI DEPRESSANTS:

01.	**Amitriptyline** *("Laroxyl"-Roche)*			
	Tablets 10 mg.	56,500	115,800	2,250
	Tablets 25 mg.	11,250	12,500	750
02.	**Protriptyline** *("Concordin"-MS&D)*			
	Tablets 5 mg.	80,000	10,000	–
	Tablets 10 mg.	90,000	10,000	20,000
03.	**Isocarboxazide** *("Marplan"-Roche)*			
	Tablets 10 mg.	–	12,500	–

OTHER DRUGS AVAILABLE

04.	**Imipramine** *("Tofranil"-Geigy)*		
	Tablets 25 mg.		
05.	**Chlorimipramine** *("Anafranil"-Geigy)*		
	Tablets 25 mg.		
06.	**Doxepin HCL** *("Sinequan"-Pfizer)*		
07.	**Mutabon M** (2/10) – Schering U.S.A.:	Perphenazine	2 mg.
		Amitriptyline	10 mg.
08.	**Mutabon D** (Schering U.S.A.):	Perphenazine	2 mg.
		Amitriptyline	25 mg.
09.	**Motival** (Squibb tablets):	Fluphenazine	0.5 mg.
		Nortriptyline	10 mg.
10.	**Amitriptyline** *("Elavil"-Frost)*		
	Capsules 10 mg.		
	Capsules 25 mg.		
	Amitriptyline *("Tryptanol"-MS&D)*		
	Capsules 10 mg.		
	Capsules 25 mg.		
11.	**Limbritol** *(Roche, capsules)*		
	Amitriptyline 12.5 mg.		
	Chlordiazepoxide 5 mg.		

POLICIES, DIRECTORATE OF MENTAL HEALTH, MINISTRY OF HEALTH:

1. **Hospitalization:**
   Ambulatory treatment must be emphasized as an alternative to hospitalization and sometimes equally effective method.
2. **Inter-relationship of Behavioural Sciences:**
   To obtain maximum beneficial effects, psychiatry must arrange working relationships with psychology, sociology, and anthropology.
3. **Isolationist Tendencies of the Mental Hospital:**
   This may indirectly involve attitudes to also exclude **psychiatry** from the mainstream of medical sciences. This should not be allowed to

occur.

4. **The Adoption of a Public Health Oriented Approach in Psychiatry:**
   This will enhance psychiatric coverage of the population and diminish psychiatry as an "exclusive service" for limited groups in the society.
5. **Integration of Mental Health Principles in General Medical Approaches:**
   This will allow greater psychiatric involvement at a public health level such as the appointment of consultant psychiatrists at community health centres, mental health refresher courses not only for general practitioners but also for non-medical professionals as well like: city planners, police officers, etc.

INFORMATION FROM VARIOUS AREAS:

In November, 1972, about 50 letters were distributed to various area-centres of mental health by the Directorate of Mental Health, Jakarta, with the following questions:

1. What psychotropic drugs are commonly used in your area, its estimated amount of usage, and what are your experiences?
2. Please comment on the effectiveness of these drugs and their comparative effectivity. Please submit your research data to complete your report; if possible with reprints of your publications.
3. What are your plans and expectations of the usage of psychotropic drugs for the future?
4. Your report should focus from 1970–1973.

There were about 50% responses to the enquiries. Some of the conditions described are listed below:

1. In general hospitals where treatment for the mentally ill is only supplementary, minor tranquillizers are more extensively used than major tranquillizers. As can be expected, there seems to be more neurotic than psychotic patients. The ratio of psychotropic drug usage is:
   - Minor tranquillizers : 55%
   - Major tranquillizers : 10%
   - Anti-depressants : 35%
2. Mental hospitals generally carry out clinical drug trials such as:
   1. The Navy Hospital, Jakarta, has done trials with Anatensol, Meleril and Serax;
   2. Medan Mental Hospital did trials with Anatensol and Melleril;
   3. Bandung Mental Hospitals with pyrithioxine *("Encephabol")*, Nozinan and Taractan;
   4. Surakarta Mental Hospital with Taractan.
3. Other detailed reports gave descriptions of local conditions or made specific suggestions:
   1. **Jakarta Mental Hospital:**
      (a) inexpensive drugs must be made available for the treatment of the chronically ill.
      (b) better standardization of locally-made drugs must be done.
   2. **Bogor Mental Hospital (West Java)**
      Regular usage of Stelazine, Largactil, Nozinan & Stelazine is done.
   3. **Magelang Mental Hospital** (Central Java):
      Demands for wider usage of psychotropic drugs like Chlorpromazine, Nozinan & Melleril, and especially recommends Chlorpromazine due to its modest price.
   4. **Bangli Mental Hospital** (Bali) :
      Reports that in Bali, drug preference is more determined by the availability of the drug rather than by its quality.
   5. **Banjarmasin Mental Hospital** (Kalimantan):
      Chlorpromazine is most suitable for the regions outside Java, it is cheap and yet effective.
   6. **Medan Mental Hospital** (North Sumatra):
      Chlorpromazine is commonly used in Medan.
   7. **The Navy Hospital,** (Jakarta):
      Reports that drug packings are not to be neglected hence domestic products should be more attractively packed.
   8. **Surakarta Mental Hospital** (Central Java):
      The best known drugs are Chlorpromazine, Melleril, Taractan and Stelazine.
   9. **Banda Aceh Mental Hospital** (North Sumatra):
      No drug trial carried out here due to lack of manpower, facilities and equipment.
   10. **Semarang Mental Hospital** (Central Java):
       No drug trials done.
   11. **Police Mental Hospital,** Jakarta:
       No drug trials done.
   12. **In general:**
       Chlorpromazine Melleril, Stelazine, Taractan, Valium, and Librium are some of the drugs most widely used. Most Mental Hospitals stress the importance of national and international meetings, workshops and seminars on psychoactive drugs such as Regional Seminar on Psychotropic Medication in Jakarta and Kuala Lumpur.

Integration of Psychotropic Medication in Public Health Centres.

The National Seminar on Mental Health held in Jakarta in 1971 observed that in Indonesia certain phenomena threaten the stability of the

community: narcotic, drug dependence, student unrest, unstable marriages, abuse of mass-media, unemployment (visible and disguised), breakdown of traditional life, changes of the traditional system of values and rapid social change. These complex social phenomena cause increased anxiety, frustration, stress and strain to which greater attention must be paid by those concerned with the health of the nation.

It was also observed that with the successful campaigns against communicable diseases within the next thirty years, psychiatry in particular, and mental health problems in general will emerge as subjects of much greater importance.

Although it was felt that drugs will never be able to bring about complete improvement of disordered human behaviour as such, it is considered that psychotropic medication will prove most beneficial in the treatment of the major psychoses, as well as some of the neurotic and behaviour disorders. It was also predicted that psychotropic medication will constitute a major stimulus for the development of psychotherapeutic approaches. Within this framework, the Seminar recommended that general practitioners should not only have greater theoretical knowledge and understanding of psychoactive drugs, but that they should be actively engaged and involved in the psychotropic medication procedures in Public Health Centres, and cooperate closely with consultant psychiatrists.

BIBLIOGRAPHY

1. Soeharto H.; "Psychotropic Medication in Indonesia." *Jiwa*, July, 1970.
2. *Indonesia, an Index of Medical Specialities. Scientific Publications*, 1972.
3. *Pharmaceutical Directory of Indonesia*, 1972 – First edition.
4. Poldinger, W.; "Compendium of Psycho-pharmaco Therapy." *Switzerland: F. Hoffman La Roche & Co. Ltd. Basel*, 1967.
5. Salan, R. and Sadono, B. et al; "Clinical Trial on Chlorprothixene ("Taractan"-Roche) in 7 State Mental Hospitals in Java." *Directorate of Mental Health*, Jakarta, 1973.
6. Maramis, W.F. and Triman; "Clinical Trial on Perazine ("Taxilan"-BYK-Gulden) in the Treatment of Schizoprenia." *Department of Psychiatry, University of Airlangga*, Surabaya, 1972.
7. Maramis, W.F.; "A Double Blind Cross over Trial on Lexotan and Placebo in the Treatment of Psycho-physiological Disorder." *Department of Psychiatry, University of Airlangga*, Surabaya, 1972.
8. Tjandra, J. cs.; "Preliminary Report Treatment of Depressive Syndromes with Chlorimipramine at the Outpatient Service." *Department of Psychiatry, University of Indonesia, Jakarta*, 1972.
9. Setyonegoro, K. and Tjandra, J.; "Treatment of Ambulatory Neurotic Patients with WY-4036." Jakarta, 1972.
10. Setyonegoro, K. and Tjandra, J.; "Trial of Oxazepam in Ambulatory Psycho-Neurotics." *Jiwa*, July, 1971.
11. Setyonegoro, K. and Tjandra, J.; "Preliminary Report. Treatment with RO 5-3350 on Ambulatory Neurotic Patients." *Jiwa*, April, 1972.
12. Setyonegoro, K. and Adikusumo, A.; "Clinical Trial with Dartalan, Searle." *Jiwa*, July, 1972.
13. Setyonegoro, K. and Wibisono, S.; "Haloperidol (Janssen) in the Treatment of Unselected Institutionalized Psychiatric Patients." *Jiwa*, January, 1972.
14. Salan, R. and Gardjito, S.O.; "Clinical Trial with Nozinan in Mental Hospitals in Java." *Directorate of Mental Health*, 1971.
15. Triman, M.P.; "Treatment with Tacitin on Patients with Anxiety." 1971.
16. Reports and Recommendations, National Mental Health Seminar, 1971, Jakarta, September 1971.
17. Reports and recommendations, National Mental Health Seminar 1972, Jakarta, September 1972.
18. Circular Letter to State Mental Hospitals, Military Mental Hospitals, Private Mental Health Clinics, University Departments in Indonesia, November 1972 and Jan. – Feb. 1973.
19. Widjono, E and Chandra, L.S.; *"Preliminary Report on The Treatment of Drug Dependents."* Drug Dependence Unit, Jakarta, 1972.