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A preliminary study of the
pharmaceutical

RESEARCH CORPORATION OF THAILAND

STUDY NO. 27

PHARMACEUTICAL MANUFACTURING INDUSTRY OF THAILAND

REPORT NO. 1

A PRELIMINARY STUDY OF
THE PHARMACEUTICAL MANUFACTURING INDUSTRY IN THAILAND

BY

NORMAN L. WAKE
KOMOL PENGSRITONG
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ASRCT, BANGKOK 1969

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F O R E W O R D

This preliminary report is designed to outline the situation in one of Thailand's important secondary industries concerning which very little published information is available. It is hoped that it may serve to draw attention to opportunities for action to overcome the stagnation which is retarding development in this essential industry.

It is intended that this preliminary report will be superseded by one in our Brief Reviews series, after the necessary surveys have been conducted.

A PRELIMINARY STUDY OF THE PHARMACEUTICAL MANUFACTURING
INDUSTRY IN THAILAND

By Norman L. Wake,^{*} Komol Pengsritong,⁺ and C. Lewis Wrenshall⁺

SUMMARY AND CONCLUSIONS

(1) The pharmaceuticals manufacturing industry in Thailand comprises 1,066 registrable factories, of which almost 90 per cent manufacture traditional medicines. Manufacturers of modern medicines number 134, of which only ten are of significant size, five having been promoted firms. Value of output of modern pharmaceuticals is probably of the order of 1,000 million baht per year.

(2) Manufacturers are almost wholly formulators, several earlier operations in local synthesis having lapsed. Imports, however, include a number of materials for which local production may be feasible, if not for the local market, then for a regional market.

(3) After a fillip following the earlier promotion of the industry, development seems to have entered a more or less stationary phase. A more intensive study is required to examine the reasons for stagnation and how further development could be resumed.

(4) The veterinary pharmaceuticals industry appears quite strong, but more information is required before definite conclusions can be reached.

* Economic Evaluation Group.

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I. INTRODUCTION

As with many other secondary industries in Thailand, published information about pharmaceutical manufacturing is almost non-existent.

Although the industry as a whole has developed a certain capability and five associates of large overseas manufacturers have been promoted, the industry gives the appearance of being at a standstill. Thus, in 1968, when imports of medicinal and pharmaceutical products stood at 568 million baht, there were a number of items included which seemed to offer, at first sight, some possibilities for local production.

This preliminary study, then, assembles such pertinent information as is readily available and, from it, endeavours to draw conclusions as to what further action might be taken to define the industry and its needs more clearly.

II. SUPPLY

History and structure of the industry

Traditional remedies, both Thai and Chinese, were almost exclusively used until about 50 years ago, when the influence of Western medicine began to be felt.

About 1940 the Thai Government set up the Government Pharmaceutical Laboratories (G.P.L.) to make modern medicines. The G.P.L. was thus able to make good some war-time deficiencies of drugs. In 1967, the Government Medical Depot was linked up with the G.P.L. which then received the new name of Government Pharmaceutical Organization (G.P.O.).

In the post-war period, the Thai Government established mechanisms for the promotion of industries, including the pharmaceutical industry. Under the Promotion of Industrial Investment Act, five companies received promotion certificates, viz:

<u>Firm</u>	<u>Date promoted</u>
1. Merck, Sharp & Dohme (Thailand) Ltd.	25 March 1960
2. Lepetit Thailand Co. Ltd.	29 December 1961
3. Dumex Ltd., Bangkok	17 September 1962
4. Glaxo-Vidhyasom Ltd.	25 June 1964
5. Hoechst Thai Ltd.	2 July 1965.

Thus, only Hoechst Thai is still within its five-year promotion period.

Two of the companies, Merck, Sharp and Dohme, and Lepetit, initially undertook locally the penultimate steps in the synthesis of several base materials, but shortly complained that they could not compete with imported materials so that their local syntheses have virtually lapsed.

The promoted companies also complained that there were anomalies in the tariff structure such that imported pharmaceuticals attracted import duties of only 10 per cent whereas the corresponding raw materials attracted duties of 30 per cent.

The Government thereupon corrected a number of the anomalies, the tariff on some items being raised as high as 80 per cent. A few anomalies still exist.

The effect of the Government's protective action was that a large number of small, unpromoted firms sprang up, and this gave rise to a second cause of complaint by the promoted companies to the effect that many of the smaller firms adhered to no quality standards and often copied trade-marks of well-known brands.

The Government acted upon these complaints by jailing some who deliberately produced sub-standard products and by introducing a new law some two years ago insisting that all manufacturers of modern-type medicines have their own registered control laboratories. The Government, through its Ministry of Public Health, also gave advice to the industry and Dr. Clarence W. Sondern was brought from the U.S.A. (under USAID) to advise on quality control.

The number of pharmaceutical factories at present registered with the Ministry of Public Health is shown in Table 1.

TABLE 1
 NUMBER OF REGISTERED PHARMACEUTICAL FACTORIES
 (as of October 1968)

	Number registered		
	Bangkok - Thonburi	Beyond	Whole Kingdom
Modern pharmaceutical manufacturers	134	14	148
Traditional " "	426	492	918

Source: Ministry of Public Health, Bangkok

All factories are privately owned except the G.P.O., the Armed Forces Pharmaceutical Laboratories, and two small factories, one of which encapsulates shark-liver oil and the other iodizes salt. Artamonoff (1965)* described the combined output of the two large government factories as "so modest that it could hardly have much effect on the local market".

Only ten of the modern pharmaceutical manufacturers can be regarded as of significant size.

Range of production

Apart from production of alcohol, distilled water, ether, sulfuric acid, and alum there is no known manufacture in Thailand of basic raw materials for pharmaceuticals. As mentioned earlier, partial syntheses formerly undertaken of several drugs appear to have lapsed.

Some formulators concentrate only on the production of a range of over-the-counter lines while others manufacture a general range covering ethicals and patent medicines.

The G.P.O. produces a range of pharmaceuticals including biologicals. Of its output, 80 per cent is ethicals and 20 per cent household remedies.

* ARTAMAWOFF, G. (1965).- Report on state-owned enterprises of Thailand. p. 107-116. USOM/Thailand report.

Major production by the industry covers most injectables and transfusion solutions, a wide range of standard tablets with the exception of those items where tariff anomalies make it more economical to import than to formulate locally. Production also includes antibiotics in hard gelatine capsules, household remedies including cold inhalers, eye drops, and analgesic balm.

Imports

Imports of "medicinal and pharmaceutical" products have increased in value from some 356 million baht in 1962 to 568 million baht in 1968. Exports are relatively much less, but increase over the period has been proportionately much greater: from 2 million to over 9 million baht in value (see Table 2).

TABLE 2
IMPORTS AND EXPORTS OF MEDICINAL AND PHARMACEUTICAL PRODUCTS
(c.i.f. value in baht)

Year	Imports	Exports
1962	356,260,824	2,268,702
1963,	326,687,598	1,675,880
1964	347,578,160	1,714,001
1965	410,258,985	2,657,064
1966	466,977,732	3,834,754
1967	548,492,897	8,507,698
1968	568,137,952	9,204,370

Source: Department of Customs, Bangkok.

Some import items comprised in the total shown above are relatively simple to make, and amongst these are:

Approximate import value, 1968
(million baht)

Penicillin for injection	7
Penicillin for oral use	2
Chloramphenicol	14
Streptomycin	5
Dihydrostreptomycin	2
Antibiotic ointment	6
Non-medicated plaster	6

Apart from the above Customs classification there are certain basic chemicals which are used wholly or partly in pharmacy and of which imports are considerable:

Approximate import value, 1968
(million baht)

Saccharin	10
Aspirin and other salicylates	4
Anaesthetics (Code 5120953)	5
Sulphonamides	6
Phenacetin	7
Glycerine	16

III. DEMAND

Because the volume of local production is not known, a notion of total consumption is difficult to obtain. So far as modern medicines are concerned, it is probably somewhat less than double the imported value and may be roughly of the order of 1,000 million baht.

The pattern of demand appears quite marked between regional preferences for modern and traditional medicines: demand for modern medicines predominates in the metropolis and the larger cities, while in the provinces demand is overwhelmingly for traditional remedies if the disposition of factories, as shown in Table 1, is indicative.

There is, of course, a gradual migration of demand toward modern medicines. The major factors influencing the change are education,

communication, the lack of rural doctors and diagnostic facilities, and the cost factor (traditional remedies are almost invariably the cheaper). Scarcity of qualified pharmacists is also a limiting factor (see below).

IV. DISTRIBUTION

The G.P.O. manufactures mainly to supply government hospitals and clinics. The Armed Forces Pharmaceutical Laboratories produces exclusively for the defence services.

In the commercial sector, retail pharmacies are the principal outlets for medicines although private clinics normally have a small dispensary attached. Only pharmacies which have a qualified pharmacist in charge are permitted to supply all types of pharmaceuticals. A major factor in industry development is that the number of qualified pharmacists in Thailand is of the order of only 1400. This seriously limits the transition from traditional to modern-type medicines.

V. VETERINARY MEDICINES

The Pak Chong Laboratories of the Department of Livestock Development claims to have capacity to produce all the country's requirements of veterinary biologicals (except diagnostic agents such as tuberculin) for the prevention and control of major infective diseases in animals. These laboratories also export to Hong Kong.

A range of formulated veterinary products for oral and external use is also produced by private enterprise.

Although government production of veterinary preparations is available to farmers at cost, the price structure of the livestock industries gives little incentive for scientific animal husbandry. There are, nevertheless, substantial imports of veterinary products in aggregate, especially of feed concentrates, anthelmintics, and insecticides against external parasites.

VI. ROLE OF GOVERNMENT

Control of the manufacture and sale of pharmaceuticals for human use in Thailand is vested in the Ministry of Public Health. It performs functions similar to those of the Food and Drug Administration in the U.S.A., but, unlike the FDA, the functions are separated. In the Thai Ministry of Public Health, inspection and the promotion of quality standards for pharmaceuticals are the responsibility of the Office of the Undersecretary of State, while assaying is carried out by the Department of Medical Sciences.

While all manufacturers of modern medicines are required to have a control laboratory, the Department of Medical Sciences undertakes, on request from manufacturers, the more sophisticated analyses at nominal cost.

Although malpractices by pharmaceutical producers still exist, the Government has gone to considerable lengths to develop and regularize the industry. The Government's efforts in this respect appear to have been favourably regarded by WHO as well as by surrounding countries. At a recent WHO regional meeting of SE.Asian countries in Katmandu, it was recommended that Thailand be made a centre for the training of pharmaceutical inspectors and analysts for the south-east Asian region. WHO, it is understood, will contribute to this centralized training operation by providing experts and equipment.

The Board of Investment originally promoted the industry, but having promoted five firms, closed the industry to further promotion. It is, at present, seeking a short-term expert to examine methods of promoting the industry on a revised basis.