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MADRAS 8.

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INDIAN TOBACCO

ISSUED QUARTERLY
BY THE
INDIAN CENTRAL TOBACCO COMMITTEE

Vol. III JULY SEPTEMBER, 1953 No. 3

CONTENTS.

Smoking in Ancient India

by

GYAN DUTT SHARMA, M.A., B.Sc.,

Khurja

THE habit of smoking has remarkably laid its hold upon the people and it continues to spread rapidly. This habit seems to be constant in this ever-changing and ageing world. It is enjoyed by old and young alike. To the smokers 'Smoking is a solace in moments of depression'. It is a pleasant companion in work and play. It is anodyne during sleepless nights.

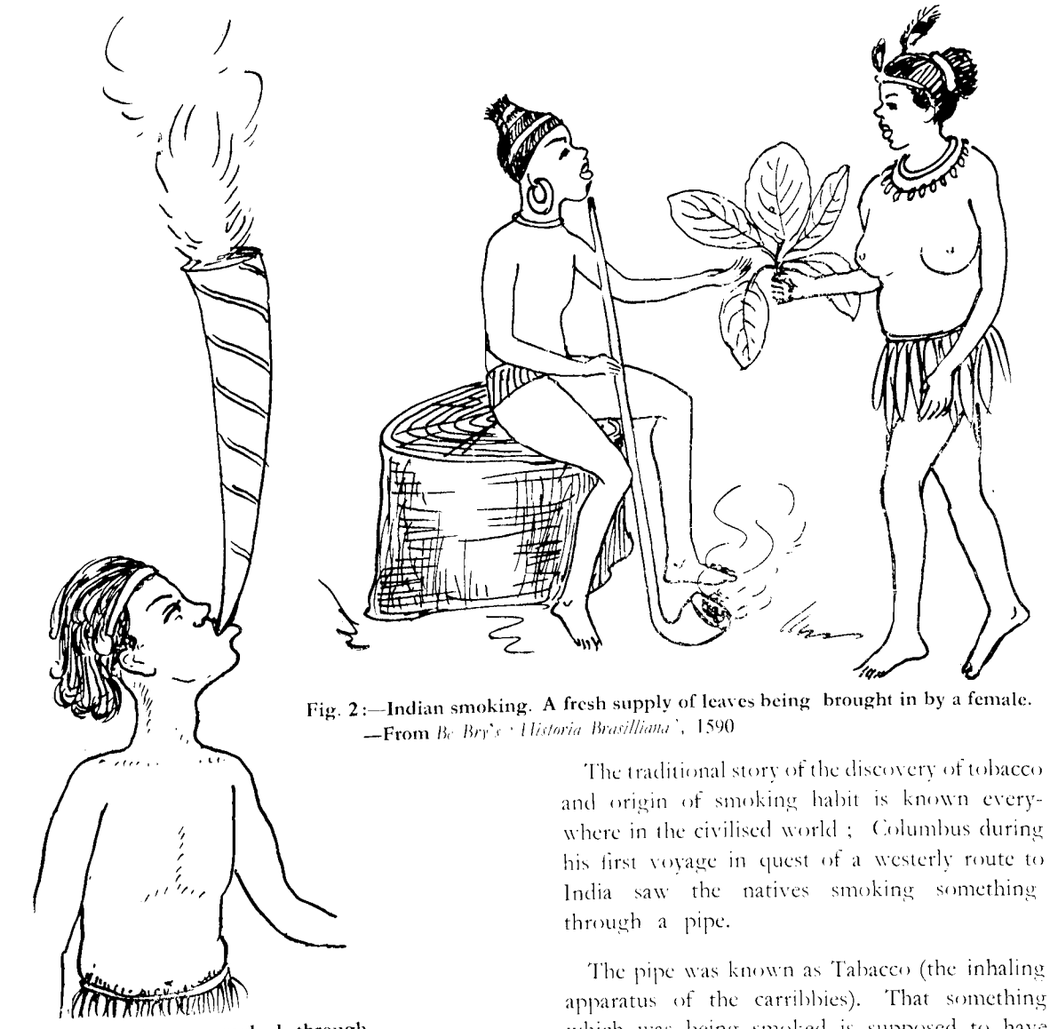


Fig. 2:—Indian smoking. A fresh supply of leaves being brought in by a female. —From *De Bry's 'Historia Brasilliana'*, 1590

The traditional story of the discovery of tobacco and origin of smoking habit is known everywhere in the civilised world; Columbus during his first voyage in quest of a westerly route to India saw the natives smoking something through a pipe.

The pipe was known as Tabacco (the inhaling apparatus of the carribbies). That something which was being smoked is supposed to have taken the name "tobacco". Since then, the

Fig. 1:- Tobacco smoked through tube as first seen by Columbus.— From *Lobel's "History of Plants"* 1576

career of tobacco has been very splendid, it has laughed at boundaries and crossed oceans in one stride and has taken roots throughout the world including India.

Tobacco and smoking may have been brought to Europe by Columbus as a 'Wonder drug', a sedative as claimed by the natives. It may have reached Moghul India, as the tradition goes, through the Portuguese, not as a medicinal drug, not as a sedative but as an innocent soothing pleasant pastime and fashion of the gentry. But tradition is not always a fact. It seems inconceivable that the most ancient of the continents and the cradle of many civilizations, Asia and particularly Indian *Ayurveda* and Chinese medical works might have been ignorant of the properties of this drug and its use through smoking. We leave China to the study of our historians. Indian medicine based on *Ayurveda* which is an essential '*Anga*' (part) of the Holy Vedas uses smoking as an effective cure for many a disease.

We have little insight into older and more ancient treatises on *Ayurveda*. Our knowledge more or less carries us upto *Charaka* and *Sushruta* and seldom beyond. Here, too, in *Charaka* and *Sushruta Samhitas* we find ample material that goes to prove that Columbus is not the original carrier of smoking habit to the Old World where it existed as early as 1st century A.D., the age of the two works[1], in India.

In these two ancient and authentic Ayurvedic works, *Charaka* and *Sushruta Samhitas* we come across 'Smoking' as being used as a cure for diseases and occupying an important place among '*Pancha Karma*'[2].

PURPOSE OF SMOKING :

There were five main purposes which smoking served : *Prayogika* for suppression of *Doshas* (*Vata*, *Kapha*), *Snehana* for lubrication purposes, *Rechana* as laxative, *Kasaghna* for removing any sort of cough and *Vamaneya* as emetic.[3]

Different herbs and spices such as thorn apple, prickly plants, Cardamom and long pepper, and even such things as horn, leather, etc., were used as smoking material.

METHOD OF SMOKING :

The thing to be smoked was first powdered and made into a paste. They took a willow or reed of 6" in length and wrapped it over with a silken piece upto a length of about 2". Then the substance was pasted on its sides over a length of about 5" and then dried in shade. When dry, the reed was taken out. Thus the thing to be smoked was ready in the form of a small tube —*Batti* of 5" long.

Smoking was done with the help of a pipe or long metallic tube called *Dhooma Netra*. This tube used to be as thick as a thumb at one end and as thin as the small finger at the other end. It had a bore equal in circumference to a pea. The material to be smoked was made in the form of a *Batti* as stated above and lighted at one end. This was then carefully inserted in *Dhooma Netra* whose length varied according to the purpose for which smoking was done.

There were different ways of smoking. Particularly it was smoked through the nose for *Prayogika*, through the mouth and nose for *Snehana*, while it was done through the nose for *Virechana*, but for *Kasaghna* and *Vamaneya* it was to be done only through the mouth.

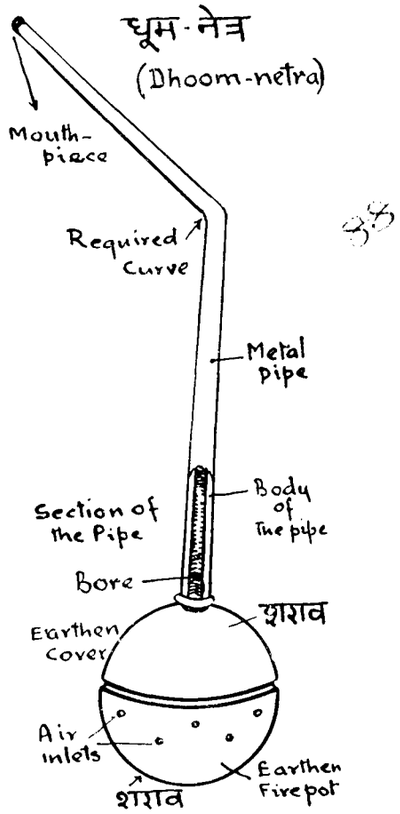


Fig. 3: Method of smoking as given in *Sushruta* and *Charaka*.

In the case of *Prayogika*, *Snehana* and *Virechana*, smoking was done with the help of *Dhooma Netra* as described above. But in the case of *Kasaghna* and *Vamaneya*, the method given is as follows :

Take up a cup, put the material to be smoked in it. Place smokeless fire over it and then put another cup having a hole in the bottom inverted, then in that hole, insert a hollow tube *Dhooma Netra* and smoke.[4]

The length of the smoking pipe varied from 6" to about 2 ft. in length. Every precaution was taken to avoid the direct attack of the smoke on the lungs. Moreover from the hygienic point of view also, the longer tube is preferable. A good smoking tube should be a long tube of fine bore and bent at some points.

Today, we smoke through *hookah* and in the form of *Beedi*, Cigarette, Cheroot, Cigar and pipe, but in India, it is the *hookah* which has got the credit of being the oldest. *Hookah* a simple appliance for smoking, is based on the same principle that the smoke should come from a distance through a pipe of fine bore bent at some points.[5]

Now-a-days smoking is mostly resorted to, to alleviate cough i.e. *Kasaghna* or as a habitual practice and it is only through mouth that one smokes. But while smoking through the mouth one should take care not to exhale the smoke through the nose as this practice badly affects the eyes.[6]

[1] *Charaka*—1st Century A.D. *Sushruta*—Before 4th Century A.D. *Vide* History of Sanskrit Literature by Dr. A. A. MacDenol 1905 Edition p. 437 and History of Sanskrit Literature by Keith p. 506

[2] प्रथमं वमनं पश्चाद्विरेकश्चानुवासनम् ।
एतानि पञ्चकर्माणि निरूहो नावनं तथा ॥

[3] धूम : पञ्चविधो भवति—तद्यथा—प्रायोगिक :, स्नैहिक :,
वैरेचनिक :, कासघ्नो वामनीयश्चेति ।
(सुश्रुतसंहितायां चिकित्सास्थाने चत्वारिंशत्तमोध्याय :)

[4] विशेषतस्तु प्रायोगिकं घ्राणेनाददीत, स्नैहिकं
मुखनासाभ्यां, नासिकया वैरेचनिकं, मुखेनेवेतरौ ।
तत्र प्रायोगिके वर्ति व्यपगतशरकाण्डां
निवातातपशुष्कां, अङ्गारेष्ववदीप्य नेत्रमूलस्रोतसि
प्रयुज्य धूममाहरेति ब्रूयात् । एवं स्नेहनं,
वैरेचनिकं च कुर्यादिति । इतरयो : व्यपेतधूमाङ्गारे
स्थिरे समाहिते शरावे प्रक्षिप्य वर्तिं मूलच्छिद्रेणान्येन
शरावेण पिधाय तस्मिन् छिद्रे नेत्रमूलं संयोज्य धूममासेवेत ।
—(सुश्रुतसंहितायां चिकित्सा स्थाने चत्वारिंशत्तमोध्याय :)

[5] दूराद्विनिर्गत : पर्वच्छिन्नो नाडीतनूकृत : ।

[6] घ्राणेनास्येन कण्ठस्थेमुखेन घ्राणपोवमेत् ।
आस्येन धूमकवलान् पिबन् घ्राणेन नोद्वमेत् ॥
प्रतिलोमं गतोह्याशु धूमो हिंस्याद्धि चक्षुषी ॥
(चरके सूत्रस्थाने पञ्चमोध्याय :)

TIME FOR SMOKING :

Smoking, as it appears from the study of old texts, was not regarded as a very desirable practice in itself. There were many restrictions, as regards the method, extent and the time of smoking.

Smoking was allowed only for 8 times in a day. Smoking was not something only for enjoyment but was used as a medicine as well.

The eight times[7] mentioned are : after bathing, taking the food, cleansing the channels, sneezing, cleaning the teeth, snuffing, putting *anjan* to the eyes, and sleeping. It was on these occasions that there was some tendency of *Shleshma* and *Vata* to increase and smoking could prove useful in combating them.

A man in *Prayogika* case was not to smoke more than 2 times, only once a day for lubrication purpose (*Snehana*) and 3 or 4 times for laxative (*Vairechana*), out of the above mentioned eight occasions.[8]

SMOKING RESTRICTIONS :

Smoking in itself is neither always harmful nor always beneficial. It all depended upon the person smoking. Smoking was prohibited in the *heamophylia*, pregnancy, fatigue, intoxic state, thirst and *Pitha*. It was also harmful after taking milk, alcohol, fats, honey and in anger, eye diseases, lyringitis, hurt in head, Diphtheria and in diseases of generative organs. If anybody smoked in the above mentioned cases then he was susceptible to various grave diseases.[9]

EFFECTS OF SMOKING :

In the ancient text, a study of the effects of smoking is also made. Smoking was regarded useful only when done in therapeutic dose and at the proper time. According to *Charaka* if smoking is done at the improper time, the man smoking, feels giddy and suffers from various diseases of head, nose, ear and tongue.[10]

Smoking was a general stimulant. It was supposed to give strength to teeth, beard, hair, moustaches etc. It also served as a good deodorant. Smoking was particularly very useful in certain diseases such as coughing, Asthma, loss of appetite, hoarseness, vomiting, drowsiness and other E.N.T. diseases.[11]

We are thus led to believe on the basis of *Charaka* and *Sushruta* the most wonderful, unique and authentic treatises of that age related to the science of life, that smoking was advocated by the ancient physicians of India as one of the effective ways of curing many and even serious types of diseases. Though smoking was then solely meant for the ailing persons only when prescribed by the recognised physicians, restricted in various ways as regards its use and prohibited to many, yet we have sufficient grounds to believe that the ailing persons might have continued it due to the addiction to the drug, they inhaled or for fear of the reactions experienced after giving up smoking on and off the prescribed time ; or might have taken up and continued thereafter out of sheer curiosity of knowing its effect or on stimulation by the urge of imitation.

The sixth century A.D. had the privilege of proving that smoking was later on habitually resorted to by the lords and kings as described by *Bana* in *Kadambari*.[12]

It may be easily concluded that addiction to smoking by the superior class of people might have instigated many to its addiction with a view to have the privilege of enjoying the company of the nobles. Conversely addiction might have forced the nobles to enjoy it, amongst the poor and the ordinary, giving rise to the institution of 'Brethren enjoying the same pipe and the cup of the community'.

7 प्रयोगपाने तस्याष्टौ काला : संपरिकीर्तिता :
वातश्लेष्म समुत्क्लेश : कालेष्वेषु हि लक्ष्यते ।
स्नात्वा भुङ्क्त्वा समुल्लिख्य क्षुत्वा दन्तान् निघृष्यच ।
नावनाञ्जन निद्रान्ते ज्ञात्मवान् धूमपो भवेत् ।
तथावातकफात्मानो न भवन्त्यूर्ध्वजत्रुजा : ।

8 परं द्विकालपायीस्या दहन : कालेषु बुद्धिमान् ।
प्रयोगे स्नैहिके त्वेकं , वैरेच्यं त्रिचतु : पिबेत् ।

9 न रक्ती न विषेणार्तो न शोचन् न च गर्भिणी ।
न श्रमे न मदे नामे न पित्ते न प्रजागरे ।
न मूर्छा भ्रमतृष्णासु न क्षीणे नापिचक्षते ।
न मद्यदुग्धे पीत्वा च न स्नेहं न च माक्षिकम् ।
धूमं न भुङ्क्त्वा दध्ना च न रूक्ष : क्रुद्ध एव च ।
न तालुशोषे तिमिरे शिरस्यभिहते न च
न शंखके न रोहिण्यां न मोहे न मदात्यये ।
एषु धूममकालेषु मोहात् पिबति यो नर : ।
रोगा : तस्य प्रवर्धन्ते दारुणा धूमविभ्रमात् ।
धूमयोग्य : पिबेद्दोषे शिरो घ्राणाक्षि संश्रये ।

(चरके सूत्रस्थाने पञ्चमोध्याय :)

10 अकालपीत : कुरुते भ्रमं मूर्छा शिरोरुजम् ।
घ्राणश्रोत्राक्षि जिह्वानामुपघातं च दारुणम् ।।

11 नरो धूमोपयोगाच्च प्रसन्नेन्द्रियवाङ्मना : ।
दृढकेशद्विजश्मश्रु : सुगन्धिविशदानन : ।।
तथाकासश्वासरोचकास्योपलेप स्वरभेद
मुखास्रावक्षवथुवमथु क्रथतन्द्रानिद्रा
हनुमन्यास्तंभा : पीनसशिरोरोगकर्णाक्षिशूला :
वातकफनिमित्ताश्चास्य मुखरोगा न भवन्ति ।

(सुश्रुते चिकित्सास्थाने चत्वारिंशत्तमोध्याये)

12 परिपीत धूमवर्तिरुपस्पृश्य ।

(" कादम्बरी " रचयिता—बाण)
पूर्वभाग

Tobacco Imports into India

by

Dr. M. S. PATEL, M.Sc., Ph.D. (N. CAROLINA)

Secretary,

and

P. N. BALAKRISHNA PILLAI, M.A.,

Statistical Assistant, Indian Central Tobacco Committee

INDIAN tobacco production averages at over 550 million lbs. annually. Her home consumption is about 450 million lbs. It will, therefore, be apparent that India is not only self-sufficient in her requirements of tobacco but also able to export her surplus raw tobacco. Obviously, therefore, she cannot be a good importer of tobacco. Her imports of raw tobacco are restricted to high class virginia tobacco used for blending in cigarettes and wrapper tobacco for cigars. The average annual imports of all types of unmanufactured and manufactured tobacco total less than six million lbs. worth about Rs. 2.5 crores. Since 1949 the imports have been on the decline. The following table gives her imports of unmanufactured and manufactured tobacco.

TABLE No. 1.—*Total tobacco imports into India* † (*By sea and air only*). (1949 1952.)

Year.	Quantity (mill. lbs.).	*Value (Rs. in crores).	Declared price per lb. (Imported tobacco).	Declared price per lb. (Exported tobacco).
			Rs. A. P.	Rs. A. P.
1949 ..	7·5	2·2	2 14 9	1 9 3
1950 ..	6·4	3·3	4 15 6	1 8 3
1951 ..	6·0	2·4	3 14 9	1 6 9
1952 ..	5·4	1·9	3 7 9	1 11 3

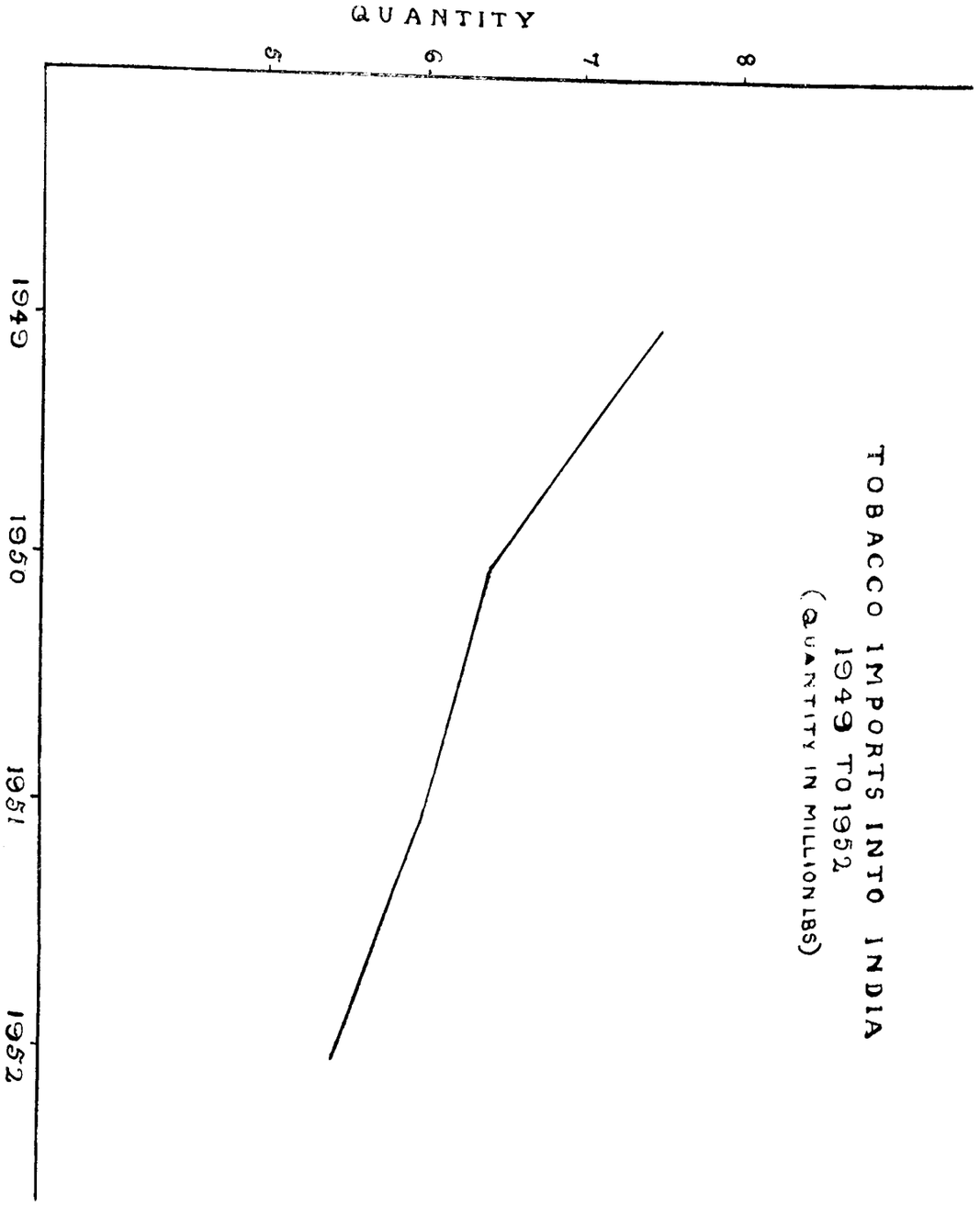
* Value excluding import duty.
† Imports by land are only negligible.

Imports of tobacco into India consist of unmanufactured tobacco, Cigarettes, Cigars, manufactured tobacco for pipes and Cigarettes and other sorts of tobacco products.

Imports of different types of tobacco and tobacco products during 1951 and 1952 were as under :—

TABLE No. 2.—*Typewise total tobacco imports.*

Type.	1951				1952			
	Quantity in pounds.	Percentage.	Value in rupees.	Percentage.	Quantity in pounds.	Percentage.	Value in rupees.	Percentage
Un-manufactured tobacco ..	5,848,086	97·05	2,15,31,247	91·13	5,271,048	98·251	1,75,72,056	93·87
Cigarettes ..	142,483	2·39	16,69,989	7·06	75,136	1·411	9,00,249	4·80
Cigars ...	11,631	0·19	1,38,642	0·57	3,947	0·073	63,962	0·34
Pipe tobacco ..	16,740	0·28	2,37,816	1·06	11,110	0·207	1,59,832	0·84
Other sorts ..	5,363	0·09	46,887	0·18	3,154	0·058	30,635	0·15
Total ..	6,024,303	100·00	2,36,24,581	100·00	5,364,395	100·000	1,87,26,734	100·00



TOBACCO IMPORTS INTO INDIA
1949 TO 1952
(QUANTITY IN MILLION LBS)

It will be seen from the above table that more than 95% of the quantity imported consisted of unmanufactured tobacco.

UNMANUFACTURED TOBACCO IMPORTS:—

Unmanufactured tobacco is the most important item in the total volume of imports. The quantity and value of unmanufactured tobacco imported from different countries during 1951 and 1952 are given below :—

TABLE 3.—*Unmanufactured Tobacco Imports* (1951*and* 1952).

Countries.	1951				1952			
	Quantity in pounds.	Percentage.	Value in rupees.	Percentage.	Quantity in pounds.	Percentage.	Value in rupees.	Percentage
U.S.A.	4,669,463	79·84	1,98,69,602	92·29	4,173,572	79·17	1,66,56,381	94·780
Burma	288,277	4·94	2,04,633	0·95	719,938	13·66	2,46,444	1·412
Ceylon	890,345	15·22	14,57,012	6·76	354,149	6·72	6,04,250	3·444
Greece	..	..	..	..	2,451		13,585	
Java	..	..	..	..	5,651		9,485	
S. Rhodesia ..	..	..	..	..	13	0·45	56	0·364
Turkey	..	..	..	..	969		3,176	
U.K.	..	..	..	..	14,305		38,679	
Total ..	5,848,085	100·00	2,15,31,247	100·00	5,271,048	100·00	1,75,72,056	100·000

The above statistics indicate that the U.S.A., Burma, Ceylon, U.K. and Java are the most important suppliers of unmanufactured tobacco and that the U.S.A. alone accounts for about 80% of it. Imports from the U.S.A. consist mainly of bright flue-cured virginia tobacco which is used for blending in cigarettes. The tobacco imported from Burma is cigar leaf. All the unmanufactured tobacco imported from Ceylon is a special type of chewing tobacco called Jaffna (locally also known as Malayalam tobacco) which is extremely popular in Travancore-Cochin State. This variety closely resembles the Meenampalayam tobacco grown in Coimbatore district of Madras in physical characteristics. The United Kingdom does not produce any tobacco except for experimental purposes and almost all the unmanufactured tobacco received from this country is of American origin either virginia or mostly cigar tobacco. Tobacco imported from Java is generally cigar wrapper leaves. A few thousands lbs. of Rangpur wrapper tobacco are also imported from Pakistan by land.

MANUFACTURED TOBACCO IMPORTS:

Imports of manufactured tobacco into India are only very little and are steadily decreasing year by year. The quantity and value of manufactured tobacco products imported during 1951 and 1952 are given below :—

TABLE No. 4.—*Manufactured tobacco imports.* (1951–1952).

Year.	Quantity lbs.	Value. Rs.	Declared Price paid per lb.
			Rs. A. P.
1951 ..	176,218	20,93,334	11 14 0
1952 ..	93,346	11,54,678	12 6 0

Manufactured products comprise of cigarettes, cigars, tobacco for pipes and cigarettes etc.

(*a*) *Cigarettes*:

Cigarettes are mostly imported from the United Kingdom, U.S.A., Belgium, Hongkong, West Germany and Netherlands. The United Kingdom accounts for more than 90% of the total cigarette imports as will be seen from the following table :

TABLE No. 5.—*Imports of Cigarettes* (1951 *and* 1952).

Countries.	1951		1952	
	Quantity in pounds.	Value in rupees.	Quantity in pounds.	Value in rupees.
Algeria	2	15	..	..
Austria	..	9	..	..
Burma	..	..	1	24
Belgium	22	100	305	2,375
Ceylon	1	30	..	..
C.W. Australia .. .	12	130	..	..
Canada	5	25	..	..
Czechoslovakia	10	125	..	..
Denmark	6	32	77	806
Egypt	313	3,238	63	1,300
France	1	2	..	..
Germany Western ..	..	..	120	1,250
Hongkong	..	..	145	2,419
Hungary	15	315	24	183
Italy	7	186	..	20
Israel	2	20	..	..
Japan	¼	12	25	213
Netherlands . ..	142	1,856	101	812
Norway	12	110	42	376
Pakistan Western ..	..	..	..	12
Saudi Arabia	..	..	7	50
Singapore	..	..	2	15
Sweden	..	..	18	123
Switzerland	..	10	..	..
Thailand	..	..	3	50
United Kingdom ..	137,970	16,38,839	67,293	8,48,913
U.S.A.	3,869	23,989	6,877	41,055
Yugoslavia	94	946	33	253
Total ..	142,483¼	16,69,989	75,136	9,00,249

(*b*) *Cigars* :—

Cigars are imported mainly from Burma, Netherlands and United Kingdom which account for more than 90% of the average annual cigar imports.

The following table gives the annual imports of cigars into India during the last two years.

TABLE No. 6. – *Imports of Cigars* (1951 *and* 1952).

Countries.	1951		1952	
	Quantity in pounds.	Value in rupees.	Quantity in pounds.	Value in rupees.
Belgium	185	6,138	199	4,671
British West Indian Islands.	105	4,729	44	1,744
Burma	7,288	15,821	1,889	7,656
Cuba	254	13,803	30	986
Denmark	11	28	39	337
Egypt	2	81	..	..
France	¼	18	..	..
Germany Western ..	..	..	128	3,668
Italian East Africa ..	..	5	..	..
Israel	..	..	6	118
Netherlands	2,199	52,676	1,520	40,468
Philippines	1	30	1	23
Republic of Indonesia ..	..	..	1	60
Switzerland	11	649	11	461
United Kingdom ..	1,572	44,358	58	2,416
U.S.A.	3	306	19½	1,334
Yugoslavia	..	..	1	20
Total ..	11,631¼	1,38,642	3,946½	63,962

(*c*) *Pipes and cigarettes* :

Tobacco for pipes and cigarettes are entirely imported from the United Kingdom, U.S.A. and Hongkong.

TABLE No. 7.—*Imports of tobacco for pipes and cigarettes* (1951 *and* 1952).

Countries.	1951		1952	
	Quantity in pounds.	Value in rupees.	Quantity in pounds.	Value in rupees.
United Kingdom ..	16,712	2,37,794	11,044	1,59,417
U.S.A.	28	22	42	115
Hongkong	Nil	Nil	24	300
Total ..	16,740	2,37,816	11,110	1,59,532

(*d*) *Other sorts* :

The other sorts of manufactured tobacco consisting mainly of snuff, chewing tobacco and smoking tobacco (other than pipe tobacco) are mostly imported from the U.K. and Netherlands and this claims more than 95% of the total imports as will be seen from the following table:

TABLE No. 8.—*Imports of other sorts of manufactured tobacco* (1951 *and* 1952).

Countries.	1951		1952	
	Quantity in pounds.	Value in rupees.	Quantity in pounds.	Value in rupees.
Belgium	..	..	8	180
Ceylon	..	..	96	380
Denmark	¦	5	..	..
Netherlands	..	..	275	2,043
U.K.	5,360	46,830	2,770	27,919
U.S.A.	3	52	5	100
Yugoslavia	..	..	..	13
Total ..	5,363¦	46,887	3,154	30,635

Import duty.

Import duty is charged on all forms of tobacco imported into India. The present rates of duty are given below :—

Type.	*Rates of duty.*
(1) Tobacco unmanufactured	Rs. 9 13 6 per lb. (Standard rate as well as preferential rate).
(2) Tobacco Manufactured not otherwise specified	Rs. 17 1 0 per lb.
(3) Cigarettes	37½% ad valorem + Rs. 39 1 0 per 1000 or Rs. 15 10 0 per pound whichever is higher + 5% of the total duty.
(4) Cigars	37½% ad valorem + Rs. 15 10 0 per lb. + 5% of the total duty.

For chewing tobacco (Jaffna) imported from Ceylon, Government of India have already granted a concessional rate of duty in 1950 51 at Rs. 0-8-0 per lb. The maximum quota of Jaffna tobacco importable into India on the duty of Rs. 0-8 0 per lb. was fixed at 1.08 million pounds in the financial year 1950-51 with a diminishing return of this quota by ten per cent every year during a period of ten years at the end of which the duty payable on every pound will be the general rate applicable to imports from other foreign countries. It is understood that the Government of India have recently agreed to import annually a maximum quota of 1.5 million pounds for the next four years. According to the present agreement the import duty on the quantity over and above the allotted quota fixed by the previous agreement up to a maximum of 1.5 million pounds will be at the rate of Rs. 0-12-0 per lb.

It will be seen from the foregoing note that India imports only a few million pounds of tobacco annually consisting mostly of unmanufactured tobacco from the U.S.A. required for blending in certain cigarettes.

The other important sources of tobacco are the U.K., Java, Netherlands, Pakistan and Burma. The imports from these countries however are of cigar tobacco particularly of the wrapper varieties in which India lacks at present. Endeavours are however in progress at the Committee's Cigar and Cheroot tobacco research station, Vedasandur (Dindigul) to evolve quality cigar wrapper tobacco. Preliminary researches have yielded promising results. These and similar other researches chiefly on wrapper tobacco will be undertaken at the Committee's Wrapper Tobacco Research Station at Dinhata (West Bengal).

Although India is quite self-sufficient in chewing tobacco, yet a good quantity of Jaffna chewing tobacco is imported from Ceylon mainly because of its special characteristics and flavour. Experiments have to be made to find out as to whether the Meenampalayam type of chewing tobacco which closely resembles Jaffna tobacco in physical characteristics could not be improved under Indian conditions to possess the same or near about characteristics of Jaffna tobacco. Also whether the Jaffna tobacco could not be cultivated in India.

Experiments to improve both the quality and yield per acre of all types of tobacco grown in India are already underway at the Indian Central Tobacco Committee's Research Stations located in important areas of tobacco production and promising results of economic applicability have already been achieved in several instances. It is hoped that with concerted drive in research and in improvement in production India will be free of the necessity of even these small imports before long.

Cultivation of Tobacco in the Jullundur District of the Punjab (India)

by

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Agronomist, Tobacco Research Sub-Station, Ferozepore.

IN the pre-partitioned Punjab, Jullundur district was noted for the production of best quality hookah tobacco. Nakodar tehsil of this district possessed the largest area under tobacco and *Parjian*, a village in this tehsil was reputed for its quality tobacco throughout the Punjab. Since the partition, the acreage under tobacco in this district has dwindled considerably. The area, however, is bound to increase as the lands have been finally allotted to the cultivators on quasi-permanent basis. The Muslim cultivators used to grow one of the finest quality tobaccos in this district and this article is intended to throw some light on the methods followed by them in growing such a good quality tobacco.

Description of types :—About a dozen varieties of *N. tabacum* were grown in this district, which were locally called as, *Noki*, *Desi*, *Dhamoori*, *Dug*, *Bingni*, *Loogrian*, *Kakar* etc. Each had its own characteristics. Their common features were that they were dwarfish and early growing, and had thin solid stems with medium sized leaves. The *Noki* variety was considered to be the finest quality tobacco. A brief description of each of the different types grown in the district is given below :—

(i) *Noki* :—This was the most predominent type grown in the Parjian and Nakodar areas. The plants were dwarfish and only about 1½ to 2 feet high. The leaves were small, measuring about 11″ long and 5″ broad. Its stem was heavy and was not hollow from within. This type was said to gain weight during storage in September—October. It was famous for its good quality and was considered to have the least deleterious effect on the brain and heart, and had, in addition, very good burning quality.

(ii) *Jullundur desi* :—This was commonly grown in the suburban area of Jullundur and was a fairly good yielding type. It differed from Noki type in that it had considerably long leaves. Though the plants were only 1½ to 2 feet high, the leaves were about 21″ long and 7″ broad.

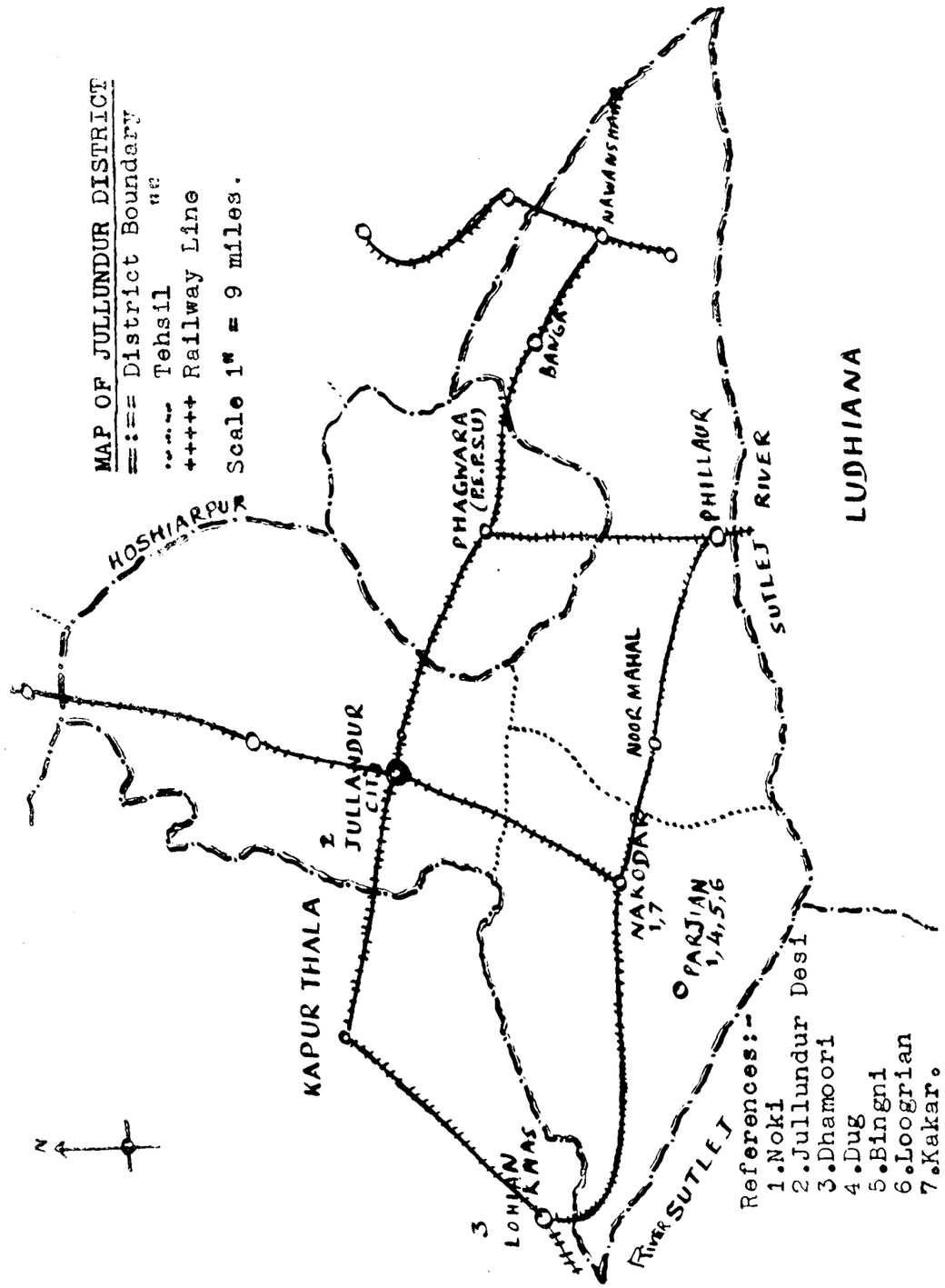
(iii) *Dhamoori* :—Its cultivation was localized around the village *Lohian-Khas*. The leaves were medium sized, oval in shape with characteristic folds on the margins and had very strong flavour.

(iv) *Dug* :—This was a tall growing type with broad leaves and thick stem.

(v) *Bingni* :—This had dark green leaves.

(vi) *Loogrian* :—This type which was also grown near Parjian, had thick hollow stem and broad leaves and was very high yielding.

(vii) *Kakar* :—The plants of this type were medium growing with a height of 2 to 2½ feet. The leaf was oval and had a peculiar puckeredness on its surface. The type was said to have been imported from Uttar Pradesh and was very strong in smoking.



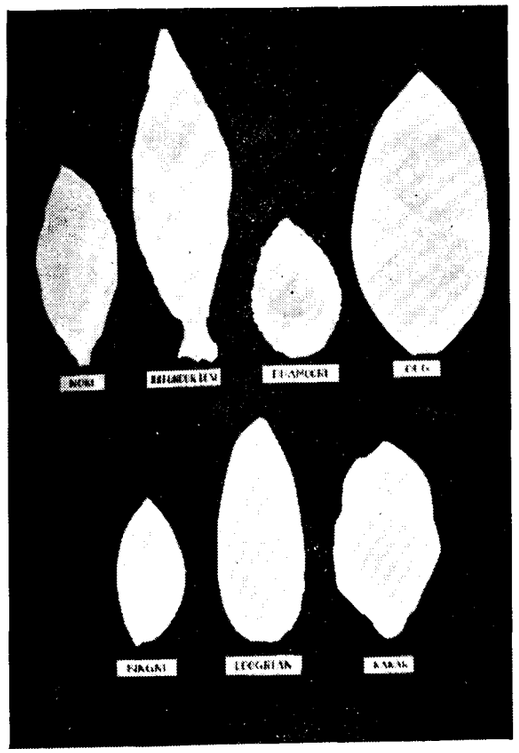


Figure showing the outline of the leaves of different types grown in Jullunder District in pre-partitioned Punjab (1/11th of actual size).

Nursery :—The land which had potatoes (*Solanum tuberosum*) or preferably a fallow land was generally used for raising tobacco nursery. The soil was turned over two to three times with spades and half a cart load (about 800 lbs.) of well rotten Farm Yard Manure was applied to one marla of land (1/160th of an acre), sufficient to yield enough seedlings to plant an acre. About 1½ chts. i.e. 1/5th lbs. of seed was broad-cast per marla. The land was irrigated by well water.

The nursery in Parjian was usually sown by about the middle of January and the seedlings were ready for transplanting by the end of March. As the seed was sown late in January, there was no need to cover the seedlings against the frost. There was however a practice, though uncommon, of putting in Senji (*Melilotus parviflora*) along with the tobacco seed, so that, Senji acted as a natural cover for the seedlings against frost. The nursery was generally raised in a shady place. For late plantings, the nursery was sown in the middle of March i.e. after the cold weather was past.

When the seedlings had grown up, they were again manured with two or three baskets of Farm Yard Manure per marla of land. This top dressing of Farm Yard Manure was sometimes done 4 to 5 times so as to get the seedlings ready for planting earlier and also to save it from the attacks of frost.

Manuring :—Tobacco was invariably manured with well rotten Farm Yard Manure. The quantity of manure varied from 16 to 40 cart loads per acre, lower dozes being more common. About 16 cart loads of *Kallar* were later on added when the tobacco started flowering and in some cases, 8 maunds per acre of khapra (wheat (*Triticum vulgare*) eaten up by insects) was also added. After manuring, the crop was invariably hoed.

Rotation :—The most common rotation followed in the district was Maize (Zea Mays)—Senji—Tobacco. It was also grown after Shaftal (*Trifolium resupinatum*) Potatoes and wheat. In case of wheat it was transplanted in the stubbles of wheat without preparing the land, so as to avoid delay.

Transplanting :—The transplanting was done towards the middle of March. The planting was generally done early morning or in the evening, the latter practice being considered better as the seedlings get the full night for establishing themselves.

The crop was mostly transplanted flat and in very exceptional cases it was planted on ridges. The width of the plot in case of flat planting varied from 5½′ to 8′. There were generally 4—6 rows of plants in each plot. Larger sized plots

were found at places where water table was high. The usual practice was to plant tobacco at $1\frac{1}{4}$ feet distance each way. A closer planting of 1 foot each way was also common in types with smaller leaves. Broad leaved types, on the other hand, followed still wider spacing of $1\frac{1}{2}'$ each way.

The length of the bed varied a great deal according to the size of the field. It ranged from 25 feet to 100 feet. If the length of the bed was more, it required more water for irrigation, though the moisture lasted for a longer period, but if the plots were smaller in length, it required more frequent irrigations. 80 to 100 feet length was however more common.

In case of ridge-planting, the beds were 70′—80′ long and the size of the ridges was $2\frac{1}{2}$ to 3 feet. The planting was done at $1\frac{1}{4}'$ to $1\frac{1}{2}'$ distance from plant to plant on both sides of the ridges.

The tobacco was generally planted on dry land by making a slanting slit with the edge of *Khurpa* and watering it immediately afterwards

Irrigation and hoeing :—In Parjian, the irrigation of the crop was governed by a number of factors. It generally went with the harvesting and thrashing of wheat. After first irrigation called *choa*, the second watering was given on the third day after transplanting. The irrigations were given in the early morning. Later on, the crop was irrigated after 4—5 days and hoed. The hoeing in the initial stages was very light and only cracks were removed with the blade of *khurpa*.

Subsequent irrigations were given after every 5—7 days. The crop received a drought of a few days after the 6th irrigation when the thrashing of wheat started. It generally received 12—13 irrigations. A drought of 8—10 days was again allowed to the crop when it neared maturity. This drought of 8—10 days was said to produce superior quality of tobacco.

Topping and suckering :—The top flowers were removed as soon as the plants had developed 12—13 leaves. After topping, the suckers begin to come out, which were also removed after every 3 or 4 days.

Harvesting :—The crop was considered to be ready for harvest when the suckers proceeded to the bottom leaves. These are removed two to three times. In case of rain, the crop was allowed to stay on for another 4—5 days more, till it developed the necessary gummy surface on the leaves.

The harvesting was done in early morning and the whole plant was cut with a *khurpa*.

Curing :—Pit curing was most commonly practised.

In Parjian, the crop was cut early in the morning and allowed to lie in the field for 24 hours. It was collected next morning and taken to a secure place near the well or dwelling so that, it could be easily and effectively removed to a better site in case of rains. It was thus kept for 3—4 days till it got properly dried. Thereafter, it was buried in the pits for 7—8 days. If the tobacco was not pliable at the time of burying, water was sprinkled with wheat stalks dipped in water. The pit was 4′ × 2′, its length varying according to requirements.

In Jullundur, instead of rectangular pits, a circular pit 4′ to 5′ in diameter and 2′ 2½′ deep was more common. The tobacco was arranged in this pit in a circular manner with the butts pointing outwards. The plants were pitted about 2 feet above the ground level. The heaping process was completed during the early morning and the mass left uncovered for the whole day, resulting in the generation of heat and slow fermentation. It was covered with Sarkanda and earth in the evening.

Ground curing was also prevalent in some parts though to a lesser extent. In Nakodar, the crop after being cut and dried for 24 hours was collected and put in a heap over the surface of the land with butts of the plants pointing outwards in a rectangular heap. This was

covered over with quilts, chaddars etc., and kept for 24 hours outside in the sun. During this time, the leaves turned yellow. On the 4th day, the heap was broken and the plants were again spread out for drying out on a piece of land which had been previously watered and was nearly in *vattar* conditions. They remained there for 3 days so that stalks get properly dried. Next day, water was sprinkled early morning to make the leaves more pliable for handling and finally put in the pit for 8—10 days, depending upon the moisture content of leaves. These were later taken out and made in ropes. The heaping of the plants for 24 hours was sometimes dispensed with. This practice, however, was said to develop leaf of better quality.

In Jullundur, the ground curing method was slightly different. After the plants had been dried, they were arranged over the surface of the land in a circular heap. The heap was raised 4—5 feet over ground level and covered with quilts, gunny bags and kept in that condition for 2 or 3 days. Thereafter, the heap was again broken up and butt ends were turned inside the heap and kept as such for 2 or 3 days. It was broken up for the third time and the butt ends were again arranged towards the periphery of the heap. By this method, the leaves again got inside the heap and absorbed sufficient moisture during the day and night and attain the pliability for making into ropes.

Rope making :—There were two methods commonly practised viz. *rope* and *juri* making. The types having very broad leaves were twisted into ropes and only the leaves were utilised for the purpose. *Juri* making was practised in types having narrow leaves and solid stems ; both the leaves and stalks were used for this purpose

	The average yields per acre were as under
Narrow leaved types ..	1,000 lbs. to 1,200 lbs.
Broad leaved types ..	1,400 lbs.

The work on the improvement of *Noki* and *Desi* types of tobacco is in progress at the Tobacco Research Sub-station, Ferozepore and very good and promising strains have been isolated. These will be available for distribution to the cultivators in the very near future.

Survey of Hookah and Chewing Tobaccos in Darbhanga District of Bihar

by

B. S. KADAM[1] AND B. T. SAJNANI[2].

OUT of over 38,200 acres under hookah and chewing tobacco in the Bihar State, nearly 34,000 acres are grown in the three districts, Muzaffarpur, Darbhanga and Purnea. For this area, the Indian Central Tobacco Committee established an experimental station in 1950 at Pusa. Before planning investigations, it was felt that a small scale survey of the prevalent cultural practices would be helpful. Pusa, being located in the Darbhanga district, a survey was first undertaken in the district in December – February, 1951 52. A detailed questionnaire comprising all operations of tobacco culture, was utilised for the purpose. The places visited are shown in the accompanying map. In each village progressive cultivators were invited for discussion and to obtain information regarding various local practices of tobacco production.

Enquiries were made separately for both the species. *Rustica* was found to be concentrated mostly round about Jhanjharpur (North-east Darbhanga district) but round about Darbhanga town both the species were being grown side by side.

Soil :—Tobacco is grown on soils ranging from light sandy to medium silt loams. Lighter soils at higher elevations are generally used for *tabacum* while low-lying heavier types of soils are preferred for *rustica*.

Rotation :—Generally two years rotation of maize-rahar* mixture-fallow-tobacco is followed in the district. Maize and rahar are sown mixed in May-June. Maize is harvested in September but *rahar* continues to occupy the land up to March. The land remains fallow from March to September and tobacco is planted by the end of September or beginning of October. Tobacco is harvested in January-February and after about three months, maize-rahar mixture is repeated. Some cultivators grow tobacco after tobacco or follow other rotations *e.g.* maize-sweet potatoes-fallow-tobacco ; maize-gram-fallow-tobacco ; maize-wheat-fallow-tobacco or maize-peas, barley mixture-fallow tobacco.

In the case of *rustica*, no rotation is followed as the lands, being low lying, remain submerged during monsoon. Round about Darbhanga town, however, Maize-mustard-fallow-tobacco combination is followed.

Nursery :—Preparation of land commence as soon as it is free from the previous crop, usually *rahar*, in March. Two to four cross ploughings with a country plough are given each month from March to July. Depending upon weather conditions and availability of labour and implements, number of ploughings vary from 10 to 20 during this period. In addition to ploughings, digging with spade is also done in some places. Farmyard manure is applied during ploughing, usually at the rate of 1 to 1½ maunds for an area of 10′ × 20′, which is considered sufficient to plant an acre. Farmyard manure is sometimes supplemented by either ash, oilcake or waste tobacco leaves. Sometimes, larger areas, up to 500 sq.ft. are put under nursery to make allowance for the loss of seedlings due to "damping off" and other nursery diseases and pests.

Raised beds are prepared just before sowing about the end of July and the seed is broadcast

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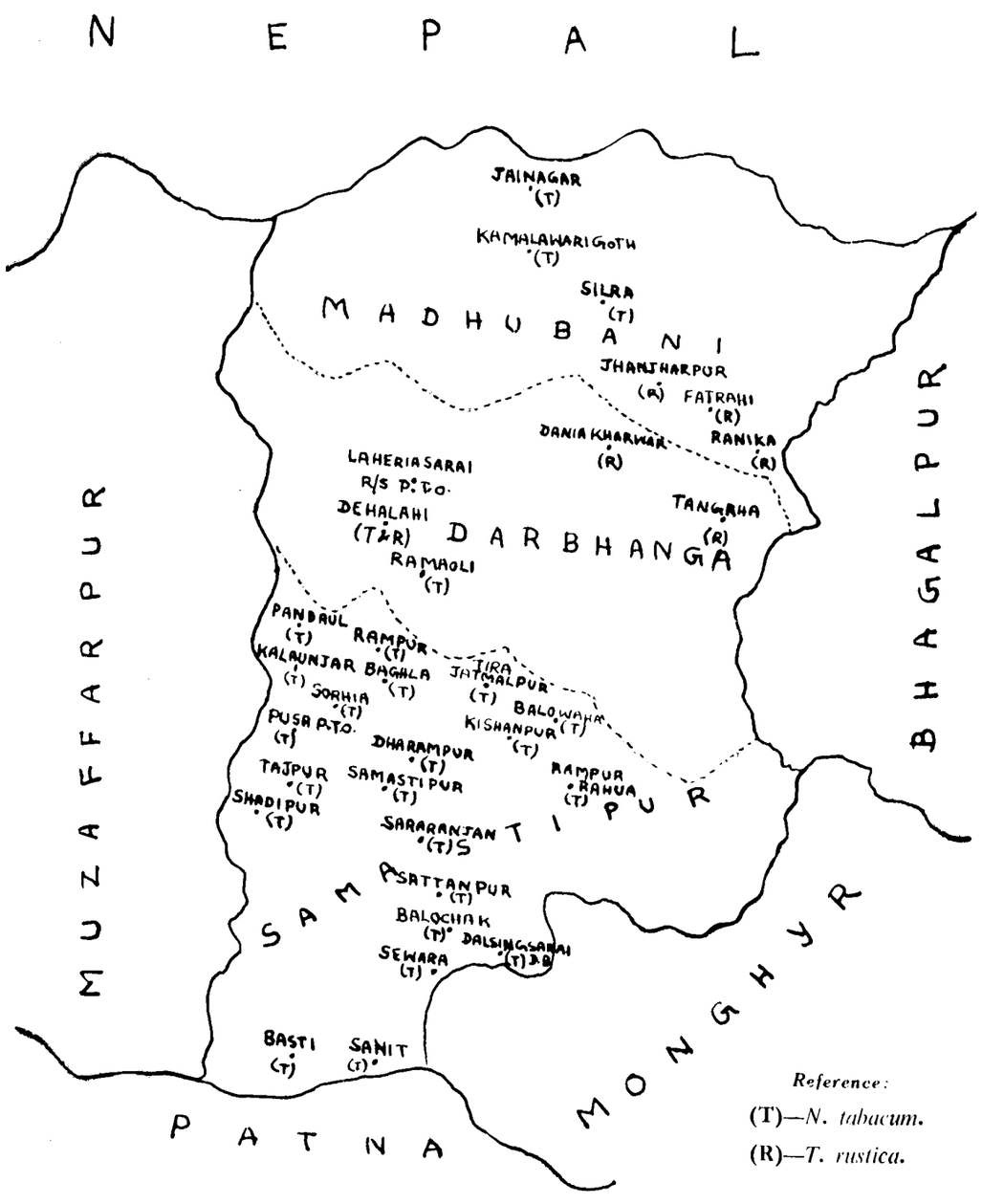
* *Cajanus cajan* (L.) Millsp.



MAP OF DARBHANGA DISTRICT

at the rate of 1 to 2 *chattaks* (2 to 4 ounces) for seed-bed area sufficient to plant an acre. In case moisture is not sufficient in the soil, beds are watered until germination is completed, otherwise watering is done after germination, depending on weather conditions, at 3 to 4 days interval. Germination takes place in 5—7 days. About 3—4 weedings and hand hoeings are given until seedlings become ready for trans-planting in about 1½ to 2 months.

Nursery area is prepared from April onwards for *rustica* by ploughing seed-bed area 15—30 times and digging with spade 3—4 times. Well composted farmyard manure at the rate of 1 to 1¼ maund plus ½ to 1 maund of cow-dung ashes and 15 maunds of soil from paddy land are incorporated in the land for nursery about a month before sowing. Penning of animals is also prevalent in some areas in addition to farmyard manure and ashes.

Raised seed beds are prepared just before sowing at the end of September or the beginning of October. Five to eight hundred square feet area is considered sufficient to raise seedlings for one acre and about ½ to 1 lb. of seed is used for sowing. If there are no rains, hand watering is done daily till seed germinates in about 7—10 days. After this, the interval of watering is every 3—4 days. Beds are covered in some places. Weeding and interculturing is done two to three times and the seedlings become ready for the field in about 6 to 8 weeks.

"Damping off" is said to appear if there is a sudden shower of rain on a very warm sunny day. The disease prevails throughout the district. The farmers do not use any fungicides. But some cultivators water the seedlings in the cooler hours of the morning as this is believed to minimise the damage.

Earth thrown up by earthworms smothers seedlings. Such balls of earth are therefore constantly removed by hand. Caterpillars, small cricket and hoppers also cause some damage to young seedlings. Caterpillars are removed by hand. Some cultivators either irrigate the nursery copiously or sprinkle ashes as repellant against insects. Powdered "Mahooa" flower is also sprinkled on the seedlings by some as it is said to attract wasps which kill cricket.

Preparatory tillage :—Land is ploughed from April to September at the rate of 2—3 ploughings per month. Some cultivators dig the land with spade once or twice in the beginning in addition to ploughing. Each time, two cross ploughings are given and after this if rains occur planking is done to conserve moisture. Iron plough is not generally used for preparation of the land, but some cultivators use it once or twice in the beginning of ploughing. For *rustica* the land is prepared more or less in the similar way.

Manuring:—Usually, farmyard manure is applied just before ploughing in quantities varying from 25—30 cartloads. When fields are small, there are instances of applying Farmyard manure up-to 100 cartloads per acre. Some cultivators, in addition, use mustard cake at the rate of 400—500 lbs. per acre. A few cultivators near Samastipur were found to use night soil also for tobacco. Penning of animals is also prevalent in some places. Wherever possible, clay soil from paddy lands is applied to tobacco land once in 2 to 3 years at the rate of about 50 cartloads per acre in addition to the farmyard manure.

For *rustica*, about a month before planting, farmyard manure is applied at the rate of 25—50 cartloads and soil from paddy fields at the rate of 80—90 cartloads per acre. At some places 10 cartloads of ashes are also added. Penning of animals is done in some places.

Varieties :—Names of varieties seen growing in various places are given in the Appendix 1 along with short descriptions. *Bori* variety, with long and broad leaves, was found in most places. However, in Dalsingsarai, which is one of the important tracts of tobacco with a number of tobacco factories, *Lotni* and *Jakhri* varieties, with long and narrow leaves resembling strains, N.P. 58 and N.P. 28, were more common. These varieties are used by the factories mostly

for cigarettes though the tobacco is cured by ground curing. The two strains can also be used for hookah and chewing tobacco. In some places *N. tabacum* was named as *Desila tambaku* and no particular name of the variety was given.

Among the *rustica* only two varieties, *Vilayati*, with large thick and round leaves, and *Chhotki Vilayati*, with small, thick and round leaves were found growing in the district.

Transplanting :—'Uttara' and 'Hathia' Nakshatra, which fall in the period from the second fortnight of September to the middle of October, are considered best for transplanting tobacco, as usually last showers of monsoon are received during this period which help considerably in the establishment of tobacco seedlings. In the afternoons transplanting is done in flat beds levelled neatly with a wooden plank just before planting. If the weather is cloudy and drizzling, transplanting may commence in the morning. Soil is loosened with 'khurpi' at the point of marks for planting and a hole made for planting seedlings. In the event of wet weather only holes are made with 'khurpi' for planting seedlings.

For *rustica* the method of planting is the same but the best period is considered from about the end of October to the end of November.

Spacing : *Tabacum* varieties are spaced 3′ × 3′ but in Dalsingsarai and Jainagar tracts they are planted at 2½′ × 2½′ distance. Varieties with broad leaves are generally spaced wider apart and the distance is reduced in long and narrow leaved varieties or when the soil is very light.

Varieties of *rustica* are planted 2′ × 2′ round about Darbhanga. This spacing is reduced to 1′ × 1½′ in north eastern parts of the Darbhanga town.

After-care :—If the days are hot, plants are covered in both the species for about three days during the day with either fresh leaf bases of banana or with grass till the seedlings get established. Three to four hand hoeings with 'khurpi' are usually given at an interval of 20—30 days. First hoeing is deep and is done early in the morning. In addition to this, mulching with 'khurpi' is done round about plants after every pot watering or a shower of rain. Gap-filling is done once or twice as required.

Irrigation : If there is no rain at the time of transplanting, pot watering is usually done at the time of planting and continued for 2—3 days. Where facilities for lift irrigation exist, one or two irrigations are given at the time of topping. In the absence of lift irrigation, pot watering is done 3—4 times. More or less same practices are followed for *rustica*.

Topping :—Topping is usually done about two months after transplanting and is continued for about 1 to 1½ months as the plants become ready. The plants are generally topped at 12 leaves including 3—4 sand leaves. Sand leaves are not removed. In some places 16—18 leaves are retained per plant. Immediately after topping, the main stem is split with a needle at the top. This is supposed to check the growth of the stalk and thicken the leaves. Topping is usually done on a sunny day after 10 a.m., when the leaves are less turgid so that, chances of damaging them are lessened.

Topping is generally done at 8—14 leaves, including sand leaves, about 1 to 1½ months after planting, in *rustica*. In some places the main stem is pierced after topping.

Suckering : Side shoots are removed 4—7 times at the interval of 10—15 days after topping. In *rustica* the frequency of removal of suckers is more due to shorter interval of suckering.

Harvesting : The harvesting period of *tabacum* varieties extends from January to March in different tracts. It begins about a month later for *rustica*. Harvesting is done early in the morning. The whole plant is cut flush with the soil. It is believed that if the plant is not cut at the very base the quality of cured leaf suffers.

Curing : After harvest, plants are left in the field from four to six days for drying. They

are then brought to a curing yard which is a clean piece of land matted with green grass. The plants are arranged in small heaps in the curing yard and left for 1—2 days. The heaps are then broken up and the plants spread out on the turf. After two days the plants are turned upside down in the morning and left for four days to dry. After this, larger bulks are built and left for four days at the end of which they are broken up again and plants spread out for another four days, in between, turning the plants after two days. This process of alternately heaping, drying and exposing plants to dew at night goes on for one and half months till the leaves become dark brown and the stalks dry and lose the green colour and become dull brown and dry. The plants at this stage are taken to a curing shed. The leaves are separated from stems along with a small piece of stalk. This is done by a special curved knife called *phansul* in which the blade is attached to a flat wooden piece fixed in the ground. Leaves are tied into bundles consisting from 25 to 50 leaves. The bundles are tied with banana fibre and bulked in the sun for 3—4 days if the portion of stem attached to leaves is not completely dry, otherwise they are heaped in the shed. The bulk is reconstructed three to four times at intervals of about a week depending upon the condition of leaves and degree of heat developed in the bulk.

Grading :—Grading is done according to the size of leaves and not according to their position on the plant. Usually the leaves are graded into following three grades :—

1st grade.—*Moorhar* or *Jotia* consisting of big leaves.

2nd grade.—*Chhelma*, *Chhotki* or *Male Moorhan* consisting of small leaves.

3rd grade.—*Pheri* or *Khursan* consisting of useless and sand leaves.

The different grades are bundled separately with 10 leaves per bundle. Two to four such bundles are again tied together and packed.

Packing :—The bundles are packed in grass, gunny cloth and jute rope, each package weighing about 5 maunds (400 lbs.). Before packing, water is sprinkled on the bundles. The packages are opened after 10—20 days and repacked. If the tobacco is not sold, the packages are opened at intervals of 1 to 2 months and re-made.

Yield :—The yield of tobacco at various places varies from 13 to 27 maunds per acre depending upon the soil, amount of manure applied and irrigation. The average yield works out to about 17 maunds per acre.

Economics :—On an average the cost of cultivation of tobacco in the tract works out to Rs. 665 per acre including cost of manure and manual and bullock labour utilised by the farmer. The average gross income comes to Rs. 1,249 per acre giving a net return of Rs. 584 per acre.

APPENDIX I.—**TOBACCO VARIETIES IN DARBHANGA DISTRICT OF BIHAR.**

Village.	Range.	Sub-division.	Variety.	Description.
1. Rampur Rahua.	Kishanpur ..	Samastipur ..	(*a*) Bori ..	.. Derived from "Bora" i.e. bag, as it is long and broad like a bag and has more weight.
			(*b*) Kaunia	.. Called so, because, resembles leaves of "Koni" a millet plant. It is long and somewhat narrow and bending.
			(*c*) Katahi	.. Derived from "Kat" means to cut. The leaves are pointed as if cut on both sides.

APPENDIX 1.—**TOBACCO VARIETIES IN DARBHANGA DISTRICT OF BIHAR**—(*Contd.*)

Village.	Range.	Sub-division.	Variety.	Description.
2. Kamalabari Goth.	Jainagar	Madhubani	Desi	No name given to tobacco variety and called only 'Desi' Tambaku! The shape of leaf is narrow and long resembling N.P. 58.
3. Silra	Jainagar	Madhubani	Do.	Do.
4. Dehalahi	Laheriasarai	Darbhanga sadar	Deshla Tambaku	Long and broad leaves resembling Bori. No name given to tobacco variety.
5. Basati	....	Samastipur	Bori	Long and broad leaves.
6. Sahit	Dalsingsarai	Samastipur	(*a*) Lotni	'Lote' means bent. The leaves are bent hence called lotni, resembling N.P. 58.
			(*b*) Jakhri	Means many. The leaves are many and thick, resembling N.P. 28.
7. Balochak	Dalsingsarai	Samastipur	Jakhri	Long narrow leaves resembling N.P. 28.
8. Sewara	Do.	Do.	Lotni	Leaves long, narrow, bent resembling N.P. 58.
9. Sattanpur	Samastipur	Do.	Narvah	Meaning not known. Leaves are broad.
10. Sararanjan	Do.	Do.	(*a*) Narvah	Do.
			(*b*) Kaunia	Long and narrow leaves.
11. Dharampur	Do.	Do.	Bori and Kaunia mixture.	....
12. Pandaul	Do.	Dharbhanga sadar.	Tanki	Long and broad leaves. Meaning not known.
13. Shadipur	Samastipur	Samastipur	Bori	Long and broad leaves.
14. Ramaoli	Do.	Do.	Bhobhri	Meaning thick, variety has long, narrow and thick leaves resembling Dhamaku variety.
15. Ballowaha	Do.	Do.	Bori Balamterhi	Long, broad and bent and pointed leaves.

Wrapper Tobacco Production in Florida and Georgia (U.S.A.)

by

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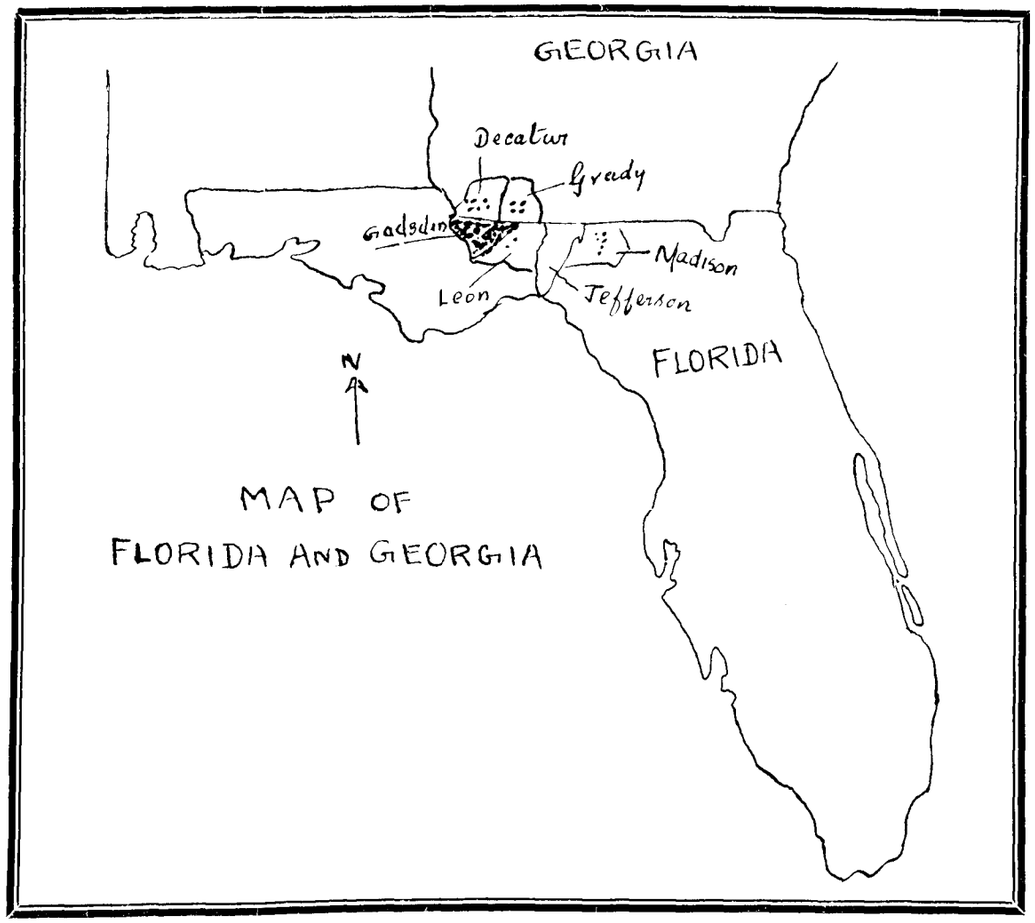
(Trainee under Point Four Programme)



MAP OF
FLORIDA AND GEORGIA

INTRODUCTION :

Cigar tobacco has been grown in Florida from the middle of the 19th century. But it was shown by about 1900, by experiments conducted in Quincy, North Florida, that thin wrapper tobacco comparable with that imported from Sumatra, could be produced by growing tobacco under artificial shade. From a small beginning, the area under wrapper tobacco or popularly called shade tobacco, has rapidly increased to over 5,000 acres by 1950. It is chiefly concentrated in the Gadsden county

and a few hundred acres in two more counties namely Leon and Madison in the State of Florida and two southern counties viz. Decatur and Grady in the State of Georgia. Wrapper tobacco is also grown in the northern section of United States in the Connecticut Valley in an estimated area of 10,000 acres.

STATISTICS SHOWING THE ACREAGE AND VALUE OF CIGAR WRAPPER TOBACCO PRODUCED IN FLORIDA AND GEORGIA FROM 1930 TO 1950 IS GIVEN BELOW:

Year.	Florida acreage.	Georgia acreage.	Total acreage.	Yield per acre in pounds.	Production in 1000 pounds.	Price per pound $	Crop value Dollar.
1930 ..	2900	500	3400	1,115	3790	0·60	2,274,000
1935 ..	2100	200	2300	900	2070	0·65	1,345,000
1940 ..	3200	700	3900	1,021	3980	0·70	2,786,000
1945 ..	2400	700	3100	1,175	3642	1·50	5,463,000
1950 ..	4200	1200	5400	1,181	6378	2·00	12,756,000

From Annual Report on Tobacco Statistics U.S.D.A. Production and Marketing Administration.

It may be noted that, since 1930, the value of tobacco per lb. shows a steep rise by about thrice from 0·70 cents to 2 dollars while the acreage has steadily increased from 1945 to 1950 by about 180%. The low production figures for the year 1935 were due to the failure of crop by Black Shank disease.

VARIETIES :

Cigar wrapper tobacco belongs to the species botanically known as *Nicotiana tabacum*. In the United States, this species is divided into various types, according to the variety of seed, the area in which it is grown, cultural practices and methods of curing and the use to which it is put. Thus, there are six different types :

Type 1. Flue-cured tobacco.
„ 2. Fire cured tobacco.
„ 3. Air cured tobacco.
„ 4. Cigar filler.
„ 5. Cigar binder.
„ 6. Cigar wrapper tobacco.

According to the geographical distribution, each type is again divided as 1, 2, 3, 4 etc. By adding this number to the type, we have the various U.S. Types designated as 11, 12, 13 and 14 in Flue-cured ; 21, 22, 23 etc. in Fire cured ; 31, 32 etc. in Air cured ; 41, 42 etc. in Cigar binder ; 51, 52 etc. in Cigar filler. The wrapper tobacco grown in Connecticut is called by number 1 while that grown in Georgia and Florida is called 2. Thus the cigar wrapper tobacco grown in Georgia and Florida is designated as U.S. Type 62. The principal variety grown under this type is called Rg which is resistant to Black Shank disease. The seed is produced mainly by the North Florida Experiment Station at Quincy and sold to a large section of growers.

CULTURAL METHODS :

Seed Beds : Seed beds are located usually on the farm where they are to be transplanted. About one hundred square yards of seed bed is considered to be sufficient to cover an area of one acre of field. In summer, a cover crop of velvet beans is planted and ploughed under by about the last week of August. During the last week of September, the beds are treated with 1 lb. of Uramon and ½ lb. of Cyanamide per square yard for controlling the weeds. Some farmers treat the beds with methyl Bromide a few days before sowing the seed.

Then the beds are fertilised at the rate of 1 to 2 pounds per square yard, with 4 9 3 fertiliser

and thoroughly mixed to a depth of 4 to 6 inches of the top soil. The beds are slightly raised with narrow drains made at every three to four feet width like the Flue-cured tobacco seed beds in India.

During the first week of January, the tobacco seed at the rate of ½ to 1 oz. per 100 square yards is thoroughly mixed with cotton seed meal and evenly sown over the seed bed. The beds are covered with cloth at a height of 6 feet, quite similar to the shade covering the fields. The beds are kept moist by sprinkling water. In recent year, overhead sprinkler system is being extensively used for watering the seed beds. When the plants are of the size of a dime or a quarter, the beds are dusted with Dithane or Fermate for controlling Blue mold which is the most common plant bed disease. This dusting is continued at least twice a week until the seedlings are pulled for transplanting. The seedlings are also dusted with parathon to kill aphids and other small insects a week before transplanting.

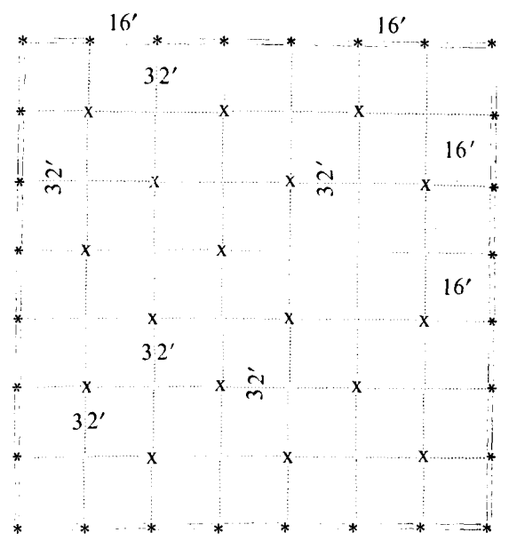
The seedlings will be ready for transplanting in about 75 days from the time of sowing.

PREPARATION OF THE FIELD :

Shade :—Cigar wrapper tobacco production requires a large amount of capital investment and the major part of this is spent for the erection of a shade over the field. The shade reduces the sun light and makes it possible to grow thin leaves of fine silky texture which otherwise is not possible in an open field. The fields are therefore generally called 'Shades' and the tobacco as shade tobacco.

The shades are constructed by erecting a wooden frame of pinewood posts, supporting galvanised wire at a height of about 8 to 9 feet above the ground. The posts are firmly buried in the ground. On the border of the field the posts are placed at a distance of 16', and inside the field 32' in one way and 16' the other way in a 'staggered' arrangement. These posts

Diagram of a "shade" showing the dispositions of the posts and the supporting wire.



* Pinewood posts on the border of the shade.
x Posts inside the shade.
... Galvanized wire.

support on the top galvanised iron wire as shown in the diagram. The outside posts in the field are anchored by wire to wooden pegs. The whole frame is covered over by a shade cloth woven with 16 threads per inch each way and firmly sewed to the supporting wires by cotton twine. The whole shade is then covered with cloth on the sides too. The cloth over the shade is run across the rows of tobacco. The shade cloth is generally fixed before transplanting and then removed and stored after harvesting is completed. It generally lasts for two years if properly handled and in the third year it is used for covering the sides of the field.

Soil :—The soils that are best suited for growing shade tobacco are well drained medium to fine sandy loams with a clay base at a moderate depth. Majority of the farmers grow tobacco in alternate years while a few grow continuously for five years before they rest the field. Those farmers who practice a two-year rotation generally

grow between tobacco crops, some cover crops such as Cockleburs or some native grass and cash crops such as corn, oats, or vegetables.

Nematode or root knot disease is the most prevalent soil borne disease present in the shade tobacco growing area. By using Cockleburs as a cover crop in rotation to tobacco, the incidence of root knot disease is considerably reduced. However, the farmers use soil fumigants for controlling the nematodes. By about the middle of December, the shades are generally fumigated with D.D. at the rate of 20 gallons per acre and EDB at the rate of 15 gallons. By using an applicator, the fumigant is injected into the soil to a depth of six inches in rows 12 inches apart and the soil is then compacted by drawing a wooden board.

The fertiliser requirements of a good tobacco crop are normally heavy and in recent years the amount of fertiliser used is reaching incredible rates. It is generally supposed that each pound of fertiliser applied to the field would yield a pound of cured leaf although this is not true with shade tobacco as the leaf is required to be very thin and spready. In the month of January or February, stable manure at the rate of 10 to 15 tons per acre is applied either by broadcast or in the drill. The soil is then harrowed and bedded or listed to rows four feet apart. About 2 or 3 weeks before transplanting, commercial fertiliser varying from 2,000 to 4,000 lbs. per acre is applied in drill or by broadcast. This consists of cotton seed meal and the tobacco special of 3—8—8 of 4—4—8 analysis in equal quantities. Some farmers apply the fertiliser at one time or apply half before transplanting and the balance before the first cultivation after transplanting. Thus 1,000 lbs. of cotton seed meal and 1,000 lbs. of tobacco special are applied before transplanting and an equal quantity later. The cost of cotton seed meal is $ 65 a ton while that of Tobacco special is $ 85.00 a ton. Dolomitic lime stone is also applied in order to neutralise the acidity of the fertiliser.

The soils of Florida need 200 lbs. of N, 150 lbs. of P_2O_5 and 200 to 250 lbs. of K_2O in the available form to grow good quality shade tobacco. The tobacco special is of the composition 4—4—8. The 10 to 15 tons of stable manure applied is more or less used as a soil conditioner to build up the humus content of the soil. The cost of production of shade tobacco is very high and seems as much as 1,800 per acre. The acreage yield is about 1,100 to 1,200 lbs. and the average price is £1.85. The price of very good quality wrappers grown in Connecticut is understood to be £7.00 per pound.

Transplanting :—The seedlings are ready for transplanting by about the middle of March and the transplanting season extends upto 10th of April. The seedlings are carefully pulled and carried to the field in baskets. The fields are once again listed before transplanting and the crests of the beds are smoothed off. Transplanting is done by a hand planter or with a dibble and the plants are set at a distance of 12 inches in the drill and in rows 4 feet apart. Nearly 11,000 plants are transplanted per acre and the gaps in the field are quickly reset within a week.

After-care :—Intensive intercultivation is done after the plants get established in the field. The field or shade is ploughed once or twice a week using scrapes and schooters of various sizes. Cultivation is done in alternate rows or middles decreasing the depth and the number of furrows in the row as the plants grow in size. Hoeing and raking is also done once or twice to kill the weeds. Cultivation is stopped about 2 months after transplanting in order to avoid breaking the leaves. As the plants are grown in the shade, the stalks tend to be very weak and are liable to break by wind or rain. The plants are therefore tied by a string to the row wires in the frame when they are a foot tall. The string is spirally wound around the stalk as the plants grow in height.

In order to control hornworms and other bugs infesting the tobacco plants dusting or

spraying insecticides is done, starting in about a month after transplanting. One per cent Parathion or 10% DDT or TDE is dusted once a week in graduated doses, starting with ten pounds per acre and increasing it to 15 lbs. as the plants grow. It is done by rotary type hand duster or by a helicopter if the plants are too large for hand dusting.

Large majority of the crop is grown under artificial irrigation. Rainfall is not uniform during the growing season and especially the month of May tends to be dry and this hits the crop very badly unless the plants are fed by irrigation. Some farmers adopt the furrow irrigation method. But this is slowly being replaced by portable sprinkler type overhead irrigation systems. By this method, it is possible to feed the plants with controlled amounts of water and prevent losses by drowning. It is estimated that an inch of water per week is the optimum which induces the best growth.

Topping is done by majority of the farmers when the plants are 7 to 8 feet tall and at the time when they begin to throw out the flower buds. Generally 18 to 22 leaves are left on the stalk. A different method is employed in suckering the plants as compared to the practice followed in flue-cured tobacco production. The suckers appearing on the top of the plant are allowed to grow in order that they may shade the upper leaves and make them grow thinner and less coarse.

Fig. 1.—Shade Tobacco Crop. (*Courtesy* : **Florida Exptl. Stn., Quincy**).

HARVESTING AND CURING :

Harvesting is done by priming ripe leaves at the rate of 4 to 5 leaves per week. The lower two or three leaves are called "Sand leaves", the next 14 to 16 "middles" and the last two or three as "tops". Harvesting commences in about 58 to 60 days after transplanting and continues for about 4 to 4½ weeks depending on the rate of ripening of the leaves. Many growers prefer to prime the leaves when they are a little on the green side. The primed leaves are carefully handled to avoid breakage and laid flat one over the other in the order in which they are primed. They are then loaded in wooden barges or canvas baskets and carried to the curing barn.

The shade tobacco is air-cured by hanging in the barns specially constructed for the purpose.

The barns usually measure 40 × 120 feet and 20 feet high. They are built with wooden planks and roof is covered over by aluminium sheet or wooden shingles. Wooden tiers spaced 24 to 28 inches and 4 feet apart are constructed similar to the flue-curing barn across the whole length of the barn leaving a hall way of 12′ to 14′ wide in the middle of the barn where stringing and other operations are conveniently done. Ventilation is provided by long vertical windows 3½ feet wide on the sides of the barn. Horizontal ventilators are also provided at the base and in the gable.

Fig. 2.—Shade tobacco curing barn showing vertical ventilator on the side.
*(Courtesy :—*North Florida Exptl. Stn., Quincy).

Stringing is done by women working at long tables placed in the barn. The leaves are strung in pairs back to back by passing a cotton twine of 10 or 12 ply through the base of the leaf with a long needle. The twine is attached to a stick of 4½ feet long and carries 32 to 34 leaves. These sticks are loaded on the tier poles at a distance of 6 to 10 inches apart. Each barn would take care of about 4 acres of shade. It is loaded with 1,800 sticks. Each stick of cured leaf weighs 4 oz. Thus the output from each barn is 4,000 lbs. of cured leaf.

Although the shade tobacco is primarily air-cured, the farmers however keep some slow burning open fires on the floor of the barn, especially during the first three or four days so that the green leaves may wilt more quickly and cure more uniformly. Pinewood charcoal is mostly used as fuel for fires. The charcoal is burned in shallow pits dug on the floor of the barn. The number of fires vary from 50 to 60, spaced at a distance of 8′ × 10′ for a barn of 40′ × 120′ in floor area. But since 1950 liquified propane gas is being used by many farmers as fuel for fires. The fires are set by burners arranged in the same manner as charcoal fires. During the first three or four days the ventilators are slightly kept open. The leaves quickly wilt by the heat of the fires. Then the ventilators are a little more opened if the weather is dry so as to replace the humid air in the barn by fresh air from outside. During the course of next 3 or 4 days the leaf tissue is mostly killed and the leaf develops a light brown colour.

During the later stages, the curing is done by alternately moistening and drying the partially cured leaf. This is done by opening the ventilator during the night and allowing the tobacco to take in moisture from the air. This moisture is dried during the daytime by setting up the fires in the barn. This is continued till the stems get dry and the tobacco acquires more uniform colour. It takes about 3 to 4 weeks for sand leaves and 4 to 5 weeks for tops to complete the curing process.

After the leaf is completely cured the doors and ventilators of the barn are left open so as to allow the leaves to absorb sufficient moisture from the atmosphere for easy and safe handling. Then the sticks of tobacco are carefully unloaded from the barn and bulked on a low wooden platform in the barn itself. The bulks are allowed to remain for a couple of days. Then the leaves on each stick are tied into a hand by the same string on which they were strung. These hands are loosely packed in wooden cases and sent to a packing house. The average yield per acre is 1,200 to 1,250 lbs. and the average price per lb. is $ 1.80.

MARKETING OF SHADE TOBACCO :

The marketing of shade tobacco is quite different from that of flue-cured or fire cured or other air cured types of tobacco. It is not sold on the warehouse floor by auction. Usually there is an intermediary between the farmer and the manufacturer. He maintains a packing house where the cured leaf is sweated, graded and packed into bales. These intermediaries are called the packers who may either grow tobacco themselves or purchase the cured leaf from the growers. When the cured leaf is delivered to the packer, the price of the tobacco is not fixed and no money is paid to the farmer. It is only after the tobacco is sold that the packer pays to the farmer after deducting the handling charges and his profits. The packers often pay advances to the farmers for meeting a part of the production costs. It is understood that there is a more harmonious relationship between the packers and farmers in the shade tobacco industry unlike the tobacco growers and Indian shippers in India.

THE PACKING HOUSE :

The cured leaf packed in wooden cases is weighed and received at a packing house. The first operation at the packing house is sweating. The tobacco from each shade received at the packing house is handled separately. The hands of tobacco are shaken and bulked with the butt ends on the outside. About 3,000 to 4,000 pounds are packed in a bulk measuring 6′ × 15′ and 5 feet high. At about the centre of the bulk, a thermometer is inserted in a perforated tube. The temperature slowly begins to rise and when it reaches 115°F, the hands are shaken and the bulk is rebuilt. The bulks are thus turned once every week or when the temperature rises to 115°F whichever is earlier. After 5 or 6 turnings there will be no rise in temperature and the process of fermentation is complete. During this process the leaves improve in more uniform colour and silky feel and develop a pleasing flavour.

The next operation is grading the leaves according to colour, smoothness and soundness. Before grading, the hands of tobacco from the bulk are moistened by a fine spray of water and packed in boxes for a couple of days. This makes the leaves soft and pliable for handling.

Fig. 3.—Curing the hands of fermented leaf before grading. (*Courtesy* : **Budd Cigar Co., Quincy**).

Grading is done by woman standing at long table.

The leaves are first removed from the string and laid flat on the table one over the other. Then they are sorted out into different grades according to colour and texture. In colour, they are sorted into dark, green and brown. Sometimes the leaf is graded into 5 to 16 grades depending upon the requirements of the trade. The following 5 grades are however more common. 1. Dark wrappers, 2. Off colour wrappers, 3. Medium colour wrappers, 4. Loose leaf, and 5. No. 2 brokes.

The graded tobacco is again tied into hands.

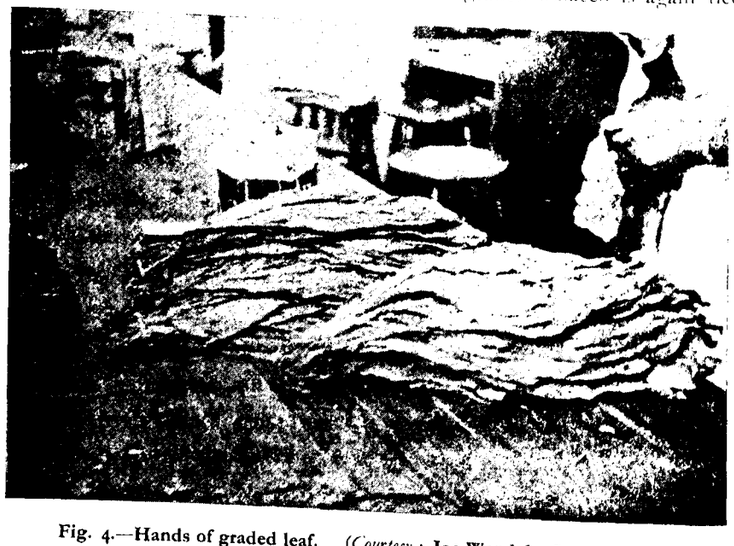


Fig. 4.—Hands of graded leaf. (*Courtesy* : **Joe Wendeles Inc., Quincy**).

The hands of the same grade are placed in a box and pressed by a hand press into a bale. Each bale weighs from 150 to 170 lbs. and measures 32″ × 32″ × 14″. The tobacco in the bale is packed in a bamboo mat with an inner lining of waxed paper.

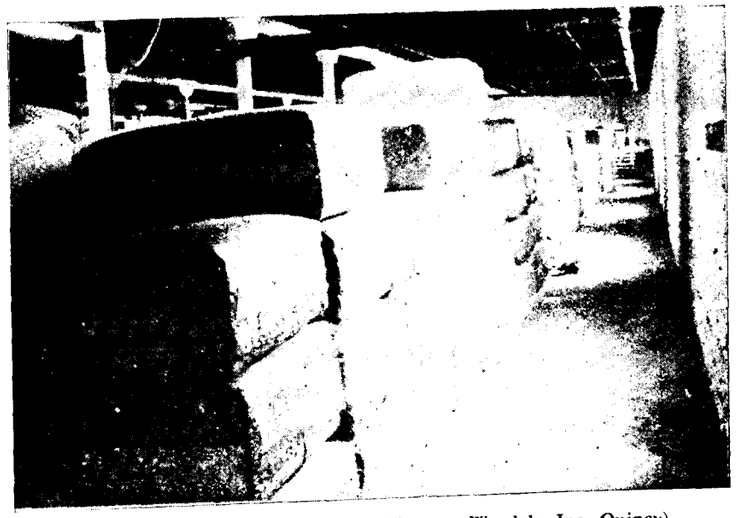


Fig. 5.—Bales of wrapper tobacco. (*Courtesy* : **Wendeles Inc., Quincy**).

The bales of tobacco are now ready for sale. The sales are made on the basis of a two-hand samples drawn at random from each bale or from a consignment of bales of the same grade.

CIGAR MANUFACTURING :

Cigar manufacturing had been completely a hand-made industry until about the year 1917.

Fig. 6.—Stemming machine. (*Courtesy* : **Budd Cigar Co., Quincy**).

But now it is mostly replaced by automatic cigar-making machines which require only two operators, one for the binder and one for wrapper.

The bales of cigar wrapper tobacco are usually stored for a couple of years for ageing before they are used. This storage improves the flavour and burning quality of the leaves.

A couple of days before actual use, the wrapper tobacco is removed from the bales, moistened with a fine spray and kept in wooden boxes. Then the tobacco is stemmed by hand or by a machine.

The stemming machine consists of a series of rollers run by strap like belts. Each machine is operated by one individual. The leaf is spread by hand and fed to the machine by the broad end. The mid rib is cleanly cut by a U-shaped rolling circular knife. The blades of stemmed leaf are laid flat one over the other and folded into pads. These pads are then taken to the cigar rolling machine.

The cigar rolling machine is a single unit, consisting of two operational halfs, one for making the " bunches " and the other for wrapping the wrapper around the bunch. Each half is manned by a woman operator.

The filler consists of medium to short pieces of tobacco blended from Pensilvania, Maryland Porturica and Cuban tobaccos. The filler is automatically fed from a trough and the operator feeds the binder leaf which rolls the filler into a " bunch ".

Fig. 7.—Cigar rolling machine binding the filler into bunches.
(Courtesy : **Budd Cigar Co., Quincy).**

These bunches are cut to the desired length, picked up by a tongs and fed to the other half of the machine. Here the second operator feeds the wrapper tobacco leaf blades on to a cutting machine which cuts it into strips of 1¾" wide and 6" long. The strip of wrapper is then spirally wrapped around each bunch.

Fig. 8.—Wrapping the bunches with strips of tobacco.
(Courtesy : **Budd Cigar Co., Quincy).**

The frames of cigars are then carried to the packing room where each one is wrapped in a cellophane paper and packed in boxes of 50 cigars each.

Fig. 9.—Packing the cigars in boxes of 50 each.
*(Courtesy :—***Budd Cigar Co., Quincy).**

Cigar manufacturing is a widespread industry in Florida and the cigar factories are established at different places and starting from Quincy in North-west Florida and extending to Keywes The number of cigars manufactured in 1948 estimated at [illegible] and the Governme

received by way of Federal taxes an amount of 7,251,520.50 dollars.

The author wishes to express his appreciation and thanks to Dr. J. Wayne Reitz, Provost of Agriculture, University of Florida for arranging his visit to Quincy, and to Dr. R. R. Kinkaid, Plant Pathologist and Mr. W. C. Rhoades, Entomologist of the North Florida Station at Quincy for taking him round the farm and explaining to him the various methods and problems regarding shade tobacco culture.

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Shri Kalidasu Sankaraiah, Director, the Guntur Tobacco Growers' and Curers' Co-operative Society, Ltd., Ongole and Member, representing the Co-operative Movement in South India on the Indian Central Tobacco Committee, has been awarded a cash prize of Rs. 50/- by the Indian Council of Agricultural Research for his Article entitled "Tobacco Growers and Co-operation", which appeared in Volume I, No. 2 (April-June 1951) of "INDIAN TOBACCO".

TOBACCO TAXATION.

The U.K. Government takes 77.9% of the retail price of popular cigarettes in taxation, the federal tax in Canada accounts for 53.6% and there are small Provincial taxes in addition. In the U.S. an average of 47.9% goes in Federal and State taxes.—*Commonwealth Producer, May-June* 1953.

EXPORT DUTY ON TOBACCO SEED OIL.

The Government of India, in accordance with their policy of reviewing from time to time the incidence of export duties, have had under consideration the incidence of the present export duty on tobacco seed oil falling under item 15 of the Second Schedule to the Indian Tariff Act, 1934. In order to improve its competitive position in foreign markets, they have decided to abolish with effect from July 8, 1953 the export duty on tobacco seed oil.

Research Abroad

OIL WATER EMULSIONS CONTROL SUCKERS

OIL-WATER emulsions proved almost as effective in checking the growth of tobacco suckers as mineral oil, reports Dr. D. B. Anderson concerning 1950 sucker control experiments. In addition, plants treated with oil-water emulsions were no more susceptible to soft rot than untreated plants. Oil treated plants did appear more susceptible than untreated plants.

Dr. Anderson conducted the experiments at the Whiteville, McCullers and Rural Hall stations with similar studies at Oxford and Rocky Mount. The varieties used were Dixie Bright 27, 101 and 102 and variety 402. Mineral oils of different grades and varying in viscosity and specific gravity were tested.

The oil was usually applied with a small paint-brush in a band about an inch wide around the end of decapitated stem. It was allowed to flow down the outside of the stem, coating the stem, buds and leaf bases with a thin film. Mechanical applicators developed by R. W. Wilson were also used, with all methods of application giving satisfactory results.

The oil killed the axillary buds but usually did not damage the leaves and stems adjacent to the buds. On warm, clear days, Anderson found that the axillary buds were usually dead within two hours of when the oil was applied.

If the oil was applied before the buds have started to grow, control was highly effective. None of the buds reached by the oil grew into suckers. But if the buds had grown to a length of one inch or more they were not affected by the treatment. Also, heavy rains immediately following the treatment reduced its effectiveness.

Dr. Anderson observed no varietal differences. Suckers on all varieties were controlled equally well. Neither were there significant differences in the effectiveness of the different grades of mineral oil.

Leaves from treated plants cured satisfactorily, and no difference in color or quality of cured leaves could be identified. Some of the tobacco from treated plants was made into cigarettes by a commercial manufacturer, and no undesirable qualities could be detected.

In co-operation with Dr. Anderson, W. G. Woltz compared the yield and value of tobacco from treated plants with than from plants topped and suckered in the usual manner. In spite of these favourable results, growers are urged to use mineral oil only on an experimental basis.

From Mid Century Report of the School of Agriculture N.C. State College of Agriculture and Engineering, Raleigh, U.S.A.

DEVELOPMENT OF TOBACCO INDUSTRY IN E. PAKISTAN.

The Government of East Pakistan have decided to establish an organisation called the Tobacco Development Advisory Board charged with the responsibility for studying the problems of the tobacco trade and industry in all their aspects and for making necessary recommendations to the Government based on such study.

The functions of the board will be to devise ways and means for effecting improvement in farm management, cultivation technique, quality and yield.

Other functions of the Board will be : to promote research and experiments as regards the type and variety of tobacco to be grown by the farmers through the fuller utilisation of the Government Tobacco Farm at Baribat, near Rangpur.

To disseminate information and intelligence regarding world trends for various types and

varieties of tobacco, their markets and prices through the agency of the Government Tobacco Farm, Burihat ;

To encourage the establishment of modern tobacco barns with a view to replacing sundried tobacco ;

To consider and formulate the programme of work in respect of matters cited above and report on the desirability and need for creating an agency or agencies for implementing the programme so drawn ;

To expand local demand and revive old markets for tobacco leaf and find new markets for tobacco and tobacco products ;

To recommend grades and standards for tobacco leaf and tobacco products ;

To promote industries based on locally grown tobacco such as cigar, cigarettes, bidi, etc. and to make recommendations regarding tariff, commercial and fiscal policies of Government affecting tobacco trade and industry.

REDUCTION IN NICOTINE CONTENT.

Tobacco loses about 6% of its nicotine when it is dried in an oven, experiments at the Eastern Regional Research Laboratory of the U.S. Department of Agriculture indicate.

Air-dried tobacco, on the other hand, showed no significant loss of nicotine after 13 to 17 weeks of drying.

Nicotine loss was not great in the oven-dried tobacco when 12% to 15% of the moisture was reduced to 3 to 5% and the temperature was held high, nicotine reduction was marked. Chemical destruction of nicotine accounted for most of the loss ; the rest passed off as vapour.—"*Tobacco*" N.Y. 4—6—1953.

Tobacco Miscellany

The Birth of the Cigarette.—The most reliable dictionaries tell us that the word " cigarette " first appeared in the language in 1842. Before this, Casanova, the Great Lover, recorded in his memoirs that in 1769 he saw men " smoking cigarettes of Brazilian tobacco wrapped in a paper tube." Dickens in 1854 wrote that he had " nearly exhausted his cigarettes." ; and a character in " Little Dorrit " rolled his cigarettes in paper squares.

The cigarette, known first as a " papelite ", came from the South Americas into Spain; from Spain it spread to the Continent generally; and although it was vaguely known in England in the early 1800s., it was usually smoked by foreigners and was regarded as a foreign habit. It was the Crimean War that brought the cigarette to Britain in a big way ; and the man who achieved this was a Scot.

Robert Peacock Gloag was his name. His place of origin was Perth. Of his early days I cannot tell you ; but I can record that as a paymaster to the Turkish forces, he went through the Crimea, where he saw Turks, French and Russians smoking these continental curiosities. He was their possibilities and, when he returned to England, he set up a small manufactory in Walworth in 1857 to make and market cigarettes —Gordon West in " A History of smoking from Elizabeth I to Elizabeth II."

Arrival of Snuff :—Of Jean Nicot, of Nimes, whose name is forever aromatically embalmed in *Nicotiana tabacum*, the plant named in his honour, the following story is told.

One day Nicot, who was French Ambassador at the Portuguese court, was walking in the herb garden of a Lisbon botanist, Damian de Goes, when he noticed a plant new to him.

" What plant is this ? " he asked.

" Ah ! " replied de Goes, " that is from seeds that came into my possession from a Dutch seaman. He was newly returned from the New world. To the plant he ascribed many marvellous qualities. It is aromatic, valuable as a medicament, and may be inhaled as smoke."

From de Goes, Nicot procured leaves of the plant, dried them and crushed them into dust. That is about the first we hear of snuff in Europe. Nicot was enchanted with his discovery. He sent samples to Catherine de Medici and she, too, adopted the habit. Snuff had arrived: and snuff had come to stay—George Godwin in " A History of Smoking from Elizabeth I to Elizabeth II ".

Automatic Self-Fill Lighter.—A new cigarette lighter design with an automatic self-fill feature has been invented and put on the market in England.

The unique feature of the new lighter is the method of filling it. It contains two chambers into which capsules containing fuel are inserted after the manner of rounds into the chamber of a pistol. It thus contains two capsules and works on one at a time. When the first capsule becomes empty, it is ejected and the second one comes into operation.

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