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Regeneration of Rattan Stumps a Preliminary Survey

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ကြိမ်ထုတ်လုပ်ထားသော ငုတ်များကို လေ့လာခြင်း

ဦးဌေးအောင် (B.Sc (Bot.) (Mdy.))
သုတေသနလက်ထောက်
နှင့်
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တွဲဘက်ပါမောက္ခ၊သစ်တောတက္ကသိုလ်

စာတမ်းအကျဉ်းချုပ်

ကြိမ်များကိုနိုင်ငံခြားသို့ တင်ပို့ ရောင်းချနိုင်ရန်နှင့်ပြည်တွင်းသုံးရန်အတွက် ခုတ်ရာတွင်ကျန်ခဲ့သော ငုတ်များကို လေ့လာခြင်းဖြစ်သည်။ လေ့လာသောဒေသမှာများစွာ ကြိမ်ထုတ်လုပ်သော ဒေသဖြစ်သည့် ဧရာဝတီတိုင်း၊ မြစ်ဝကျွန်းပေါ် ဒေသတွင်ဖြစ်ပြီး ငုတ်ပေါင်းတစ်ထောင်ကျော် လေ့လာခဲ့ ပါသည်။ ထိုသို့ လေ့လာသော ငုတ်ပေါင်းတစ်ထောင်ကျော်တွင် ၆၃% ငုတ်ပင်စည်မှ ပြန်၍ အတက် ထွက်ကြောင်း တွေ့ရှိရပြီး အခြားသော ခန္ဓာပိုင်း မျိုးပွားနည်းဖြင့် အတက်မထွက် ကြောင်းတွေ့ရှိရသည်။ ထိုကဲ့သို့ပင် ရေဆင်းအရှေ့ဘက်၊မန္တလေးတိုင်းနှင့် ရှမ်းပြည်နယ်စပ် လွဲကြီးဒေသတွင်လေ့လာရာ၌ ၇၁% ငုတ်ပင်စည်မှသော်၄င်း ၊အမြစ်မှမြေအောက် လျှောက်သွားပြီး အပင်ထွက်ခြင်းနှင့် လေထဲရှိ အဆစ်မှ အမြစ်ထွက်ကြောင်းတွေ့ရှိရသည်။ အခြားသော ခန္ဓာပိုင်းမျိုးပွားနည်းများမတွေ့ရပေ။ ကြိမ်မျိုးတို့၏ ထိုကဲ့သို့ ခန္ဓာပိုင်းဖြင့် မျိုးပွားနည်းမှာ ခုတ်ထားသောနေရာကို မီးရှို့ခြင်း၊ ထွန်ယက်ခြင်း၊ မပြုပါက အတက်ထွက်ခြင်း ကောင်းမွန်ကြောင်းတွေ့ရပါသည်။

Regeneration of Rattan Stumps a Preliminary Survey

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Abstract

A survey of Regeneration of Rattan Stumps was made in an area where cutting of rattan for export and local use was heavy in Ayeyarwaddy Division. Counting of more than one thousand rattan stumps (mostly Calamus spp.) were made. About 63% of cutted stumps showed regeneration by offshoots (offsets) and no coppicing or other vegetative propagation mode was observed. Another survey was also made in Hlwe-gyi area, east of Yezin, on the border of Mandalay Division and Shan State. There also 71% of the counting showed regeneration either with offshoots or suckers but again no coppice of other mode of vegetative propagation was observed. Regeneration of rattan species by vegetative modes are good, if the cut-canes- stumps are left undisturbed.

Contents

1. Introduction

Rattan is a name given to all climbing palms and they belong to the family *Palmae*. Rattans are found mostly in the tropical rain forests, and they constitute an integral part of the tropical-forest ecosystem.

Rattan (cane) is grouped with the minor forest products of Myanmar and has a high commercial potential as are been exploited and utilized since time immemorial, in Myanmar and is South East Asia. The rattans are so invaluable to village-life that one can speak of the rattan civilization of the South East Asia. As one can speak of the rattan civilization of India and the bamboo civilization of Indo- China and Japan. (Corner, 1966).

The most important use of rattan is in making furnitures through out the world. Other uses are production of baskets, mats, walking sticks, chair seats and also used as rope in rafting of timber and construction of bridges. There are increases in demand for rattan furniture in the local as well as international markets, so a survey of rattan resources is needed. A survey will include also how they regenerate in nature and the fate of stumps which were left behind after harvesting.

This paper is only a preliminary work which will be continued in the next two to three years.

2. Review

2.1 Literature Review

In an FAO (1978) report, the genes Calamus , is found widespread from West Africa to Fiji and from South China to Queensland. The report stated also that there are 9 genere and 316 species worldwide. They are *Calamus (*with 133 spp.), *Daemonorops* (122 spp.), *Korthalsia (*30 spp).*Plectocomia* (10 spp.), *Ceratolobus* (6spp.), *Plectocomiospis* (10 spp.), *Myrialepsis* (12 spp),*Calospatha* (2 spp). and (*Bliejandia)* (1spp.) But according to Dransfield there are 13 genera and approximately 600 species in the would (Manokaran and Wong 1983). In a report to FAO Newsletter (FAO 1978) U Sein Maung Wint stated that, there are 4 genera and 30 species. U Thein Aung 1 (1972) from state Timber Corporation (now MTE) in his unpublished report, there are atleast 4 genera and 32 species of rattans found in Myanmar. In the list of Trees, Shrubs, Herbs and Principal Climbers, etc., of Myanmar, there are 5 genera and 28 species. (Hundley and Chit Ko Ko, 1961). The local names given to rattans at various places are quite confusing, and there are said to be more than 40 species in Myanmar.

2.2 Situation Review

Studies of rattan have been made intermittently, during the last few decades. Little has been done on surveying cane areas in Myanmar or systematic collection, identification and classification of rattan species. Myanmar is rich in rattan resources which are more continuously exploited than studied. The situation in Myanmar concerning rattan is, it is sold more as raw material than finish-product, which in fact earned less than the finished product. There are increases in demand for rattan furniture in the local as well as international markets. In this report to International Development Research Centre, Menon (1980) assessed the value of finished products using rattan to be US$ 1.2 billion, and raw rattan trade valued at US$ 50 billion Annual global revenue exceeds US$ 6.7 billion (Manokaran 1990). The export market is considered to be divided into three divisions. The top tire belongs to the

Japanese market; the middle to the Europe; and the bottom to USA and Australia (Lakshmana 1993).

The export from Myanmar is uncertain and most probably less than the above mentioned groups. The private ventures piled up thousands of tons of raw rattans in certain border areas which became spoiled. Nevertheless thousands of rattans are cut everyday in the cane growing areas and the places are burnt down for other crops or left behind without care. Not to say replanting, no body even cares for their regeneration.

A few years back, the FRI, Yezin started research on rattans. Biological study and silvicultural aspects such as nursery practices and propagation method studies were made. Due to understaffed conditions the progress was slow.

This paper dealt with the study of regeneration of rattan stumps, in other words, "What happened to the rattan stumps left behind by the exploiters (cutters)". Preliminary surveys were made in places in the Pathein areas and Yezin-Hlwegyi areas. The intention is to ascertain the natural and vegetative mode of regeneration, and to find out certain ways to conserve the rattan resources.

3. Natural Regeneration

Rattans reproduce naturally by abundant seed production. (see figure 4) The fruits are produced by female plants (being dioecious plants) at the time of maturity between 10-14 years of age.

And many reproduce vegetatively in nature by suckers, stolons, rhizomes and sometimes by root-producing aerial nodes. (see appendix I for explanation of the terms used.) Coppicing is seldomly found. Man can artificially propagate rattan by vegetative methods by copying the nature or by tissue culture method.

4. Survey of Rattan Stumps

Survey of Rattan Stumps was made in Pathein Area and also in Yezin- Hlwegyi area.

Atleast 4 localities for one area were marked out (about 2-3 compartments) and counting of cut-stumps was made.

The exploited (cut-stump) stump was observed and checked throughly whether there is vegetative regeneration or not and if there is, whether a sucker, a stolon or aerial root or a coppice was present.

5. Results

5.1 In the Pathein area in the Chaungtha forest reserve, in chauk- kaung locality 142 (63.11%) out of 225; in Weigyi locality 178 (62.45%) out of 285 stumps; in Seikgyi locality 153 (63.22%) out of 242 and in Chaw byar reserve 165 (63.23 %) out of 261 stumps counted were found to have new shoots. An overall percentage was 62.98% and most of the new shoots are nature. (see Table 2a)

In the Yezin -Hlwegyi Area

5.2 Here also in Yezin forest reserve, in Ngayant-chain locality 233 (71.01%) out of 328 stumps; in Ye-byaung-byan locality 168 (70.89%) out 237 stumps; in Hlwe-gyi stream-bank locality 175 (71.13%) out of 246; and in Kwang-chaung locality 199 (71.07%) out of 280 stumps counted were found to have new shoots. And overall percentage was 71.03 percent (see table 2b).

In this area also most of the new shoots are suckers in nature (see Figure1&2) but stolons and aerial rooting at the nodes of some species are also found (see figure 4) .

6. Conclusion

6.1 The rattans can reproduce vegetatively through suckers, stolons or aerial roots at the notes.

6.2 The cut (exploited or otherwise damaged) can sprout (regenerate) unless severely burnt by taungya cultivation.

6.3 According to the counting (which is a preliminary counting which continues at the moment) more than 50% of the counted stumps regenerated.

No.	Locality	Stump Counted	Regenerated	Percentage
1.	Chaukkaung	225	142	63.11
2.	Weirgyi	285	178	62.45
3.	Seikgyi	242	153	63.22
4.	Cawbyar Res	261	165	63.23

Table 2a . Stumps counted in Bathain Area.

No.	Locality	Stump Counted	Regenerated	Percentage
1.	Ngayantchaung	328	233	71.01
2.	Yebyaung	237	168	70.89
3.	Hlwe –Gyi	246	175	71.13
4.	Kwanchaung	280	199	71.07

Table 2b . Stumps counted in Yezin- Hlwegyi Area.

Fig. 1. Sucker arising from rhizome in Rattan.

Fig. 2. Suckers arising from cut-stumps base.

Fig. 3. Aerial roots and shoot in Rattan.

Fig 4. Natural regeneration of Rattan from seeds.

Recommendation

7.1 The cutted stumps should be left alone after the taungya cultivation, to regenerate naturally

7.2 Burning, if not too serious will not effect the cut - stumps.

7.3 Taungya without removing the rattan stump if possible will produce a rattan crop also.

7.4 In suckers producing stumps, the suckers can be removed from the main base or from the sucker bearing rhizome for propagation.

7.5 By the above method there is an advantage for the mother plant, because it reduces the competition as in the case of thinning.

7.6 Another advantage is that the seperated young plants will be exactly as the mother plant in genetic constitution. Hence, it is helpful in selection and improvement.

7.7 By this method it saves atleast one year by succumventing the necessary steps, such as seed collection, germination, seedling - nursery-care, etc.

Appendix I.

Terms Relating to Vegetative Propagation of Plants.

1. Aerial Roots :

These are roots which are borne around the notes at the aerial portion of the stem. Some rattan species (e.g.*Culamus floribundus* Griff.) bears area roots. When area roots are fallen on the ground or cut, and planted will produce new plants.(see Diagram in Appendix II.)

2. Coppice

A sprouting of aerial stem after being cut many trees regenerate new shoots on the stem after being cut. (e.g. Teak)

3. Offset (Offshoot)

An offset is a characteristic type of lateral shoot or branch which develops from the base of the main stem in certain plants. This term is applied generally to a shortened, thickened stem of rosette-like appearance (as in come palm species). The term offshoot is sometimes used. (See Diagram 1 in Appendix II.)

4. Rhizomes

A Rhizome is a specialized stem structure in which the main axis of the plant grows horizontally at or just below the ground surface.

Propagation is carried out by cutting the rhizome into sections; it is essentially a stem cutting. (e.g. bamboos)

5. Stolons

Stolons are modified stems that grow horizontally to the ground. At the nodes roots and shoots are formed to grow into a new plant (e.g. in *Calamus stoloniferus* (see Diagram 2 in Appendix II)

6. Sucker

It is a shoot which arise from an adventitious bud on a root. Sometimes shoots which arises from the vicinity of the crown are also referred to as suckers even though originating frostem tissue. Suckers are dug out and cut from the parent plant to become a new plant. (see Diagram 3 in Appendix II).

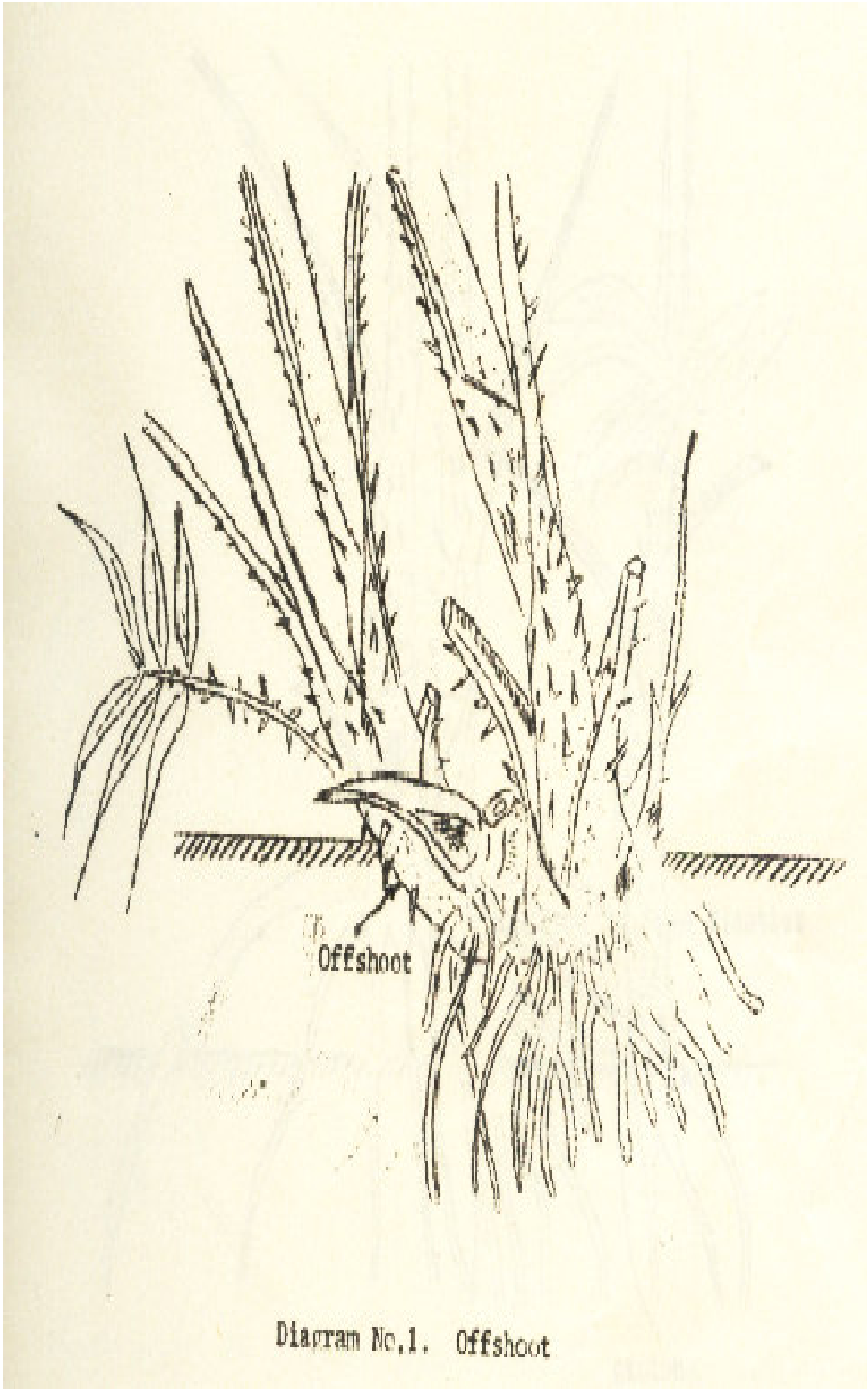

Diagram No.1. Offshoot

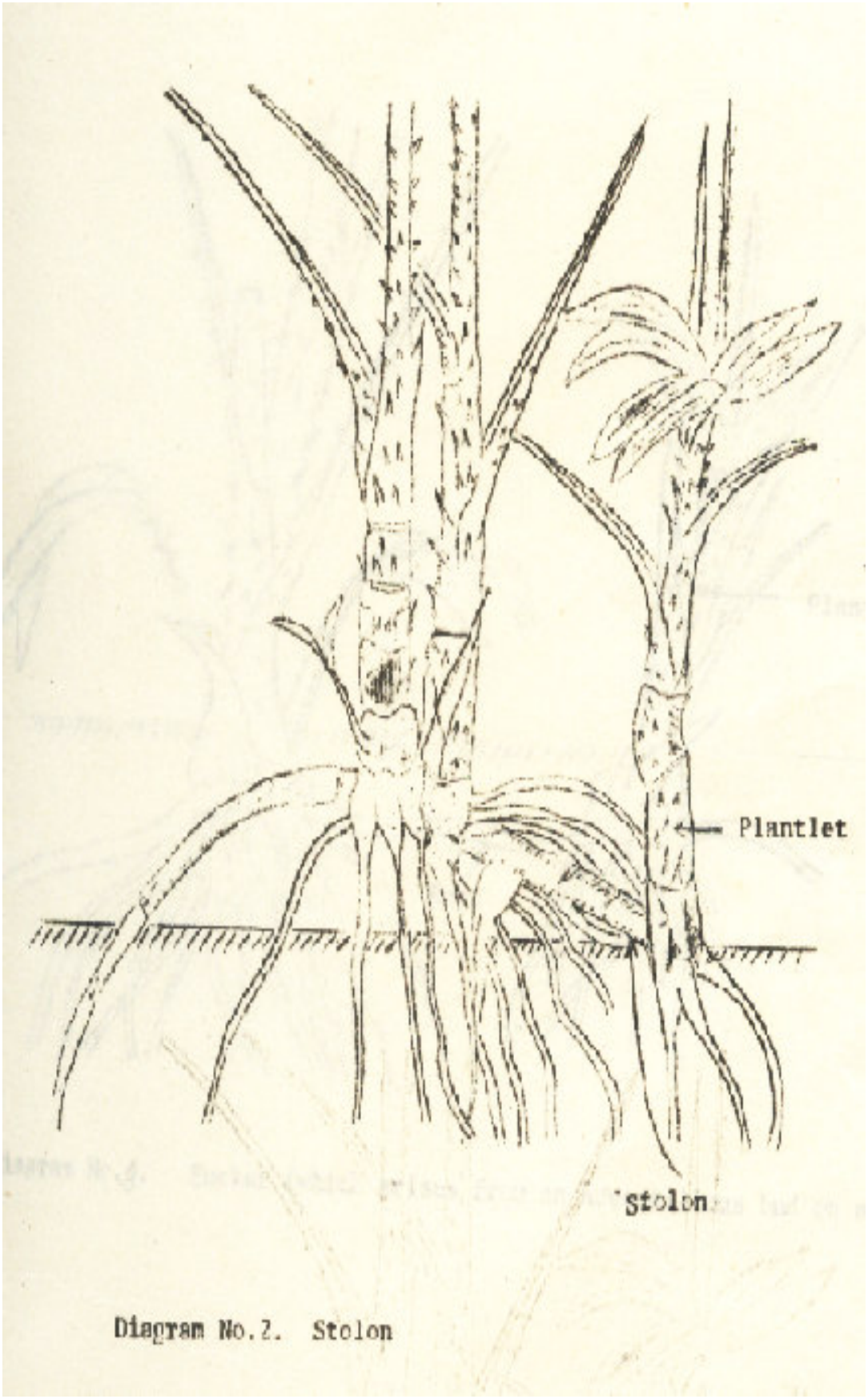

Diagram No.2. Stolon

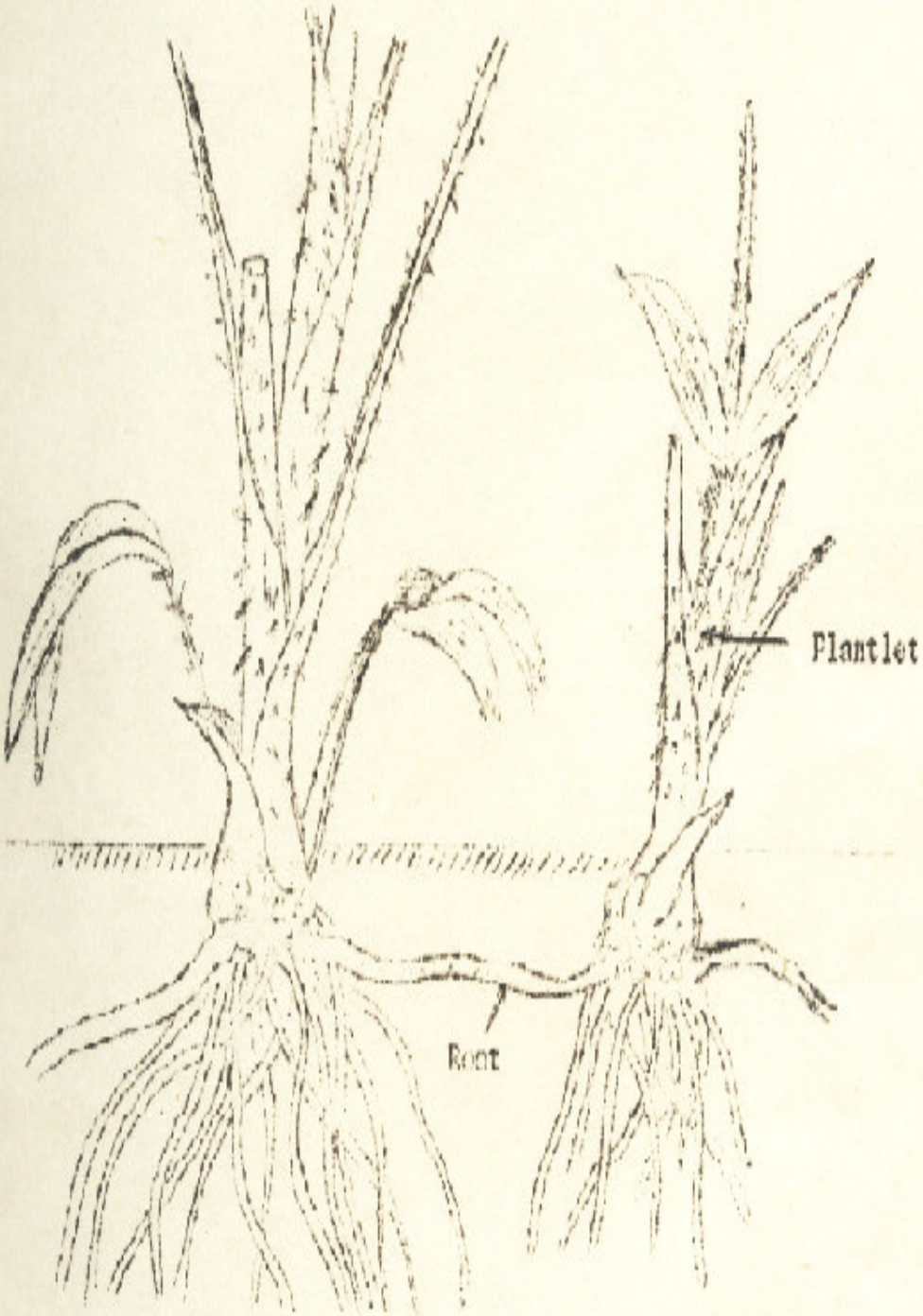

Diagram No. 4. Sucker (which arises from an adventitious bud on a root).

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