



ZEICHENHEFT

Naturkunde

Richard Wimmer

5.

1958/59

gez. gesch.



Z 20

nicht zuviel  


500m

\$\$\$\$\$

30°

Löss Lehm Sand

Milde Winter

\$\$\$\$\$

# Im Weingarten

rot

52" nörd. Breite

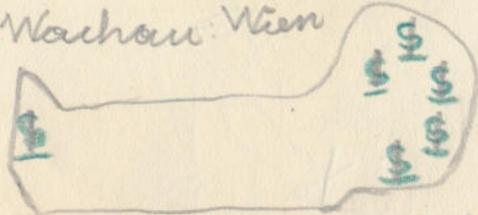
Weinbau

30" nörd. Breite

Frankreich  $\frac{1}{3}$  Italien  $\frac{2}{3}$

Weinwindel  
l. 2 - Solb.

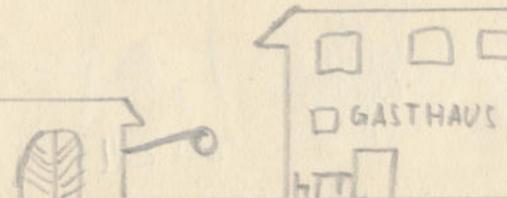
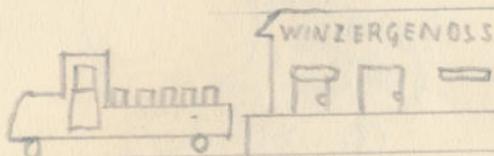
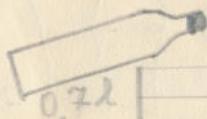
Wachau Wien



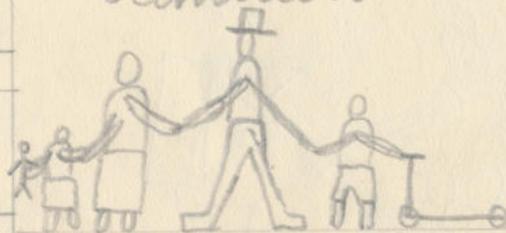
Voralberg Burgenland  
Weinbau Sudsteiermark  
in  
Osterreich



Trankel - - - -



Tausend Familien



leben vom Wein

SCHNEIDEN



HAUEN



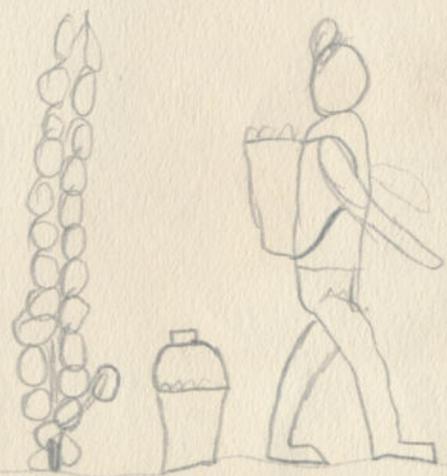
BINDEN



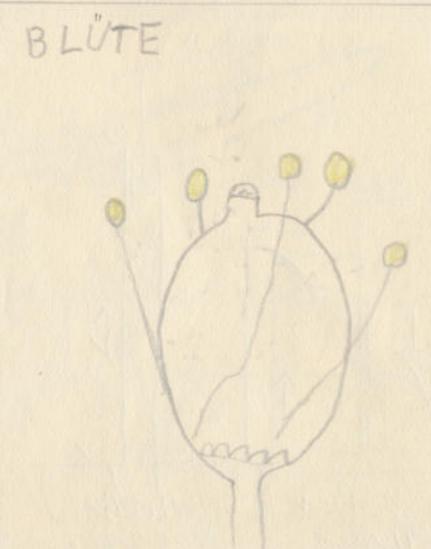
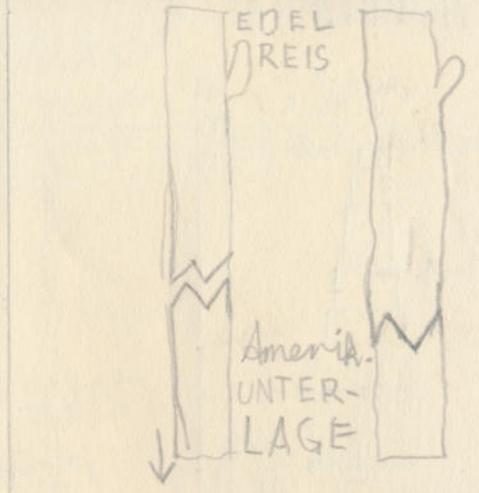
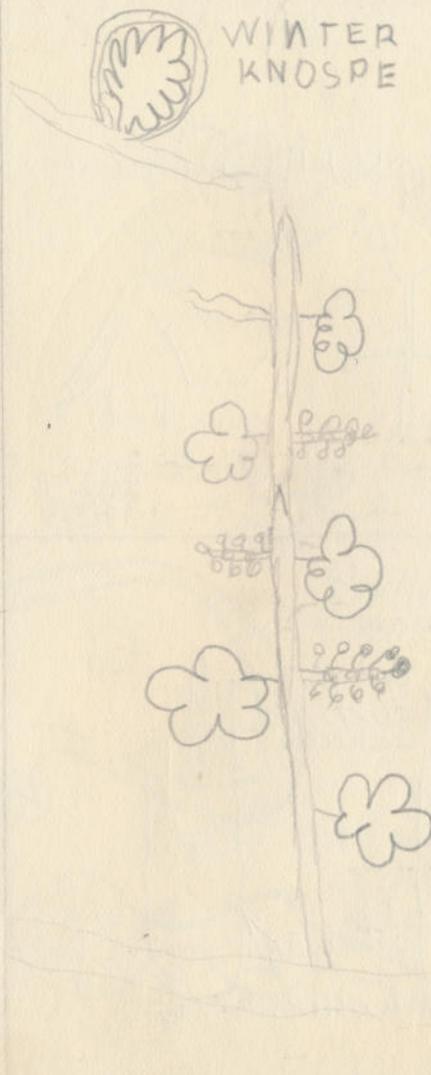
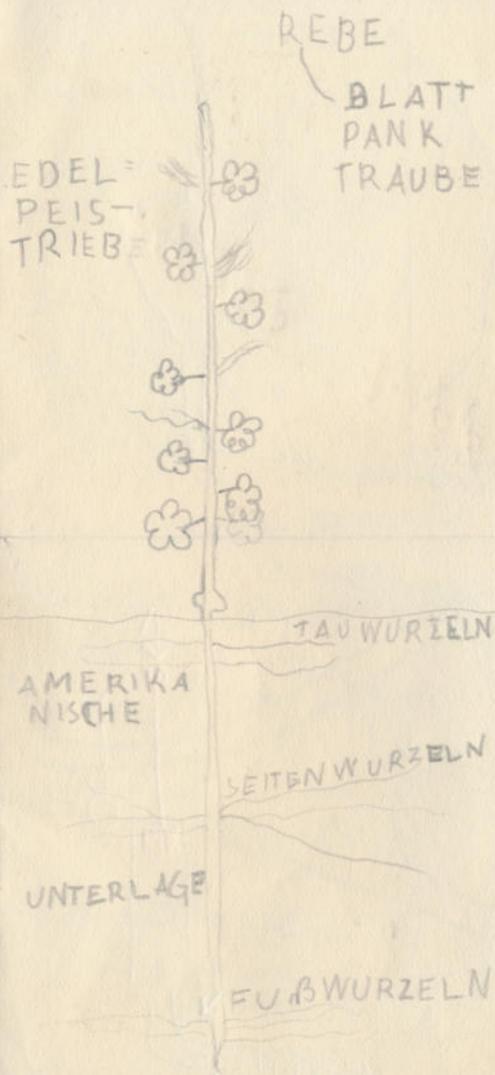
SPRITZEN



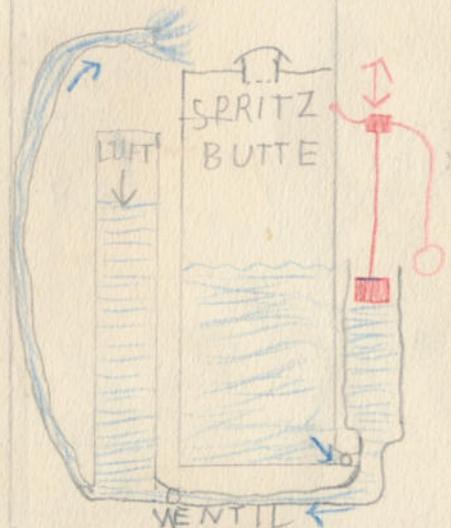
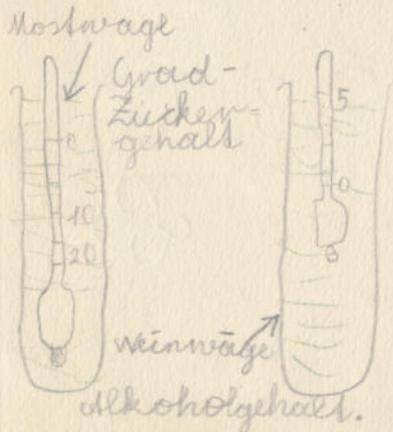
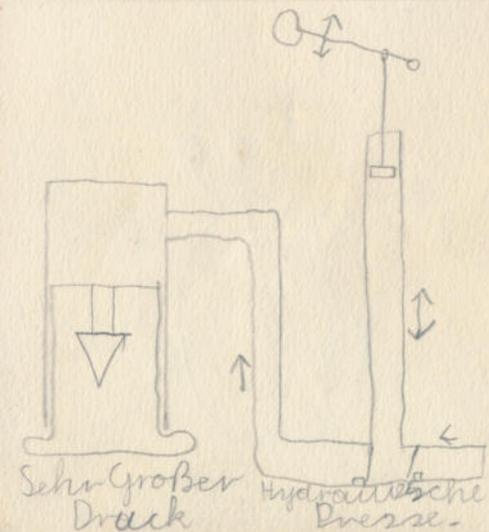
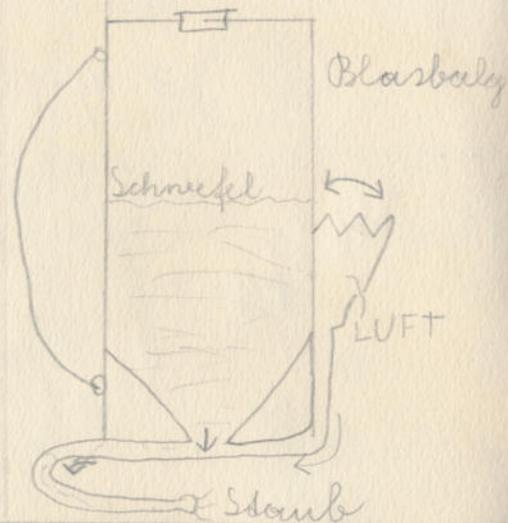
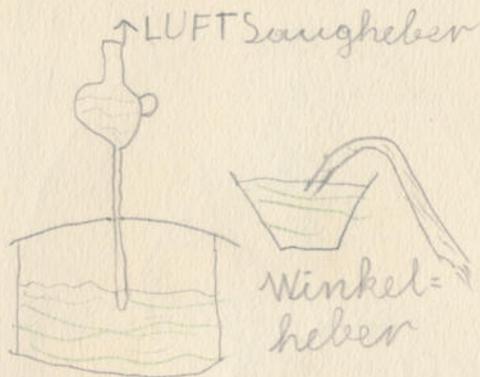
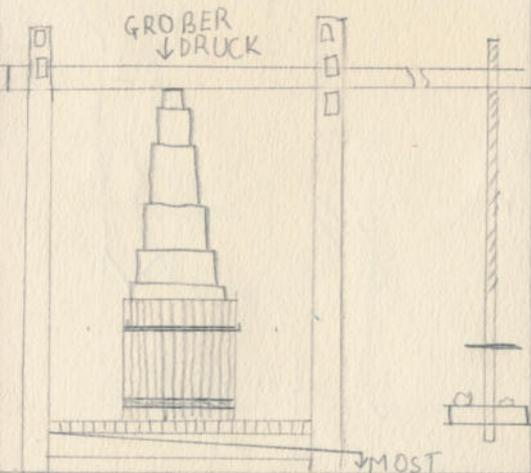
Wipfeln



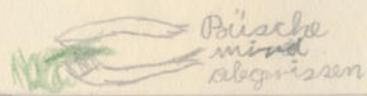
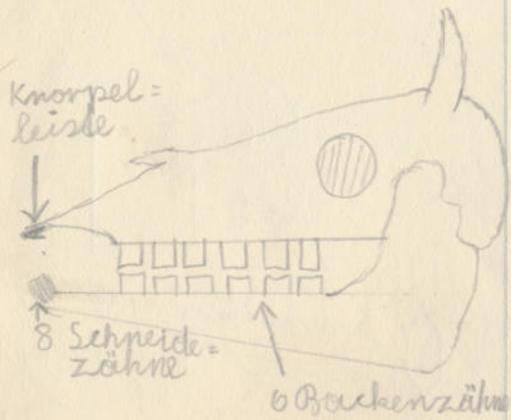
LESE



# HEBELPRESSE

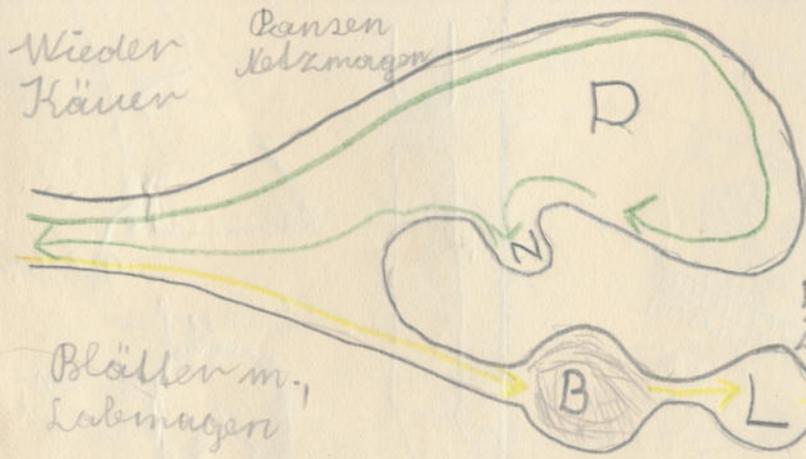
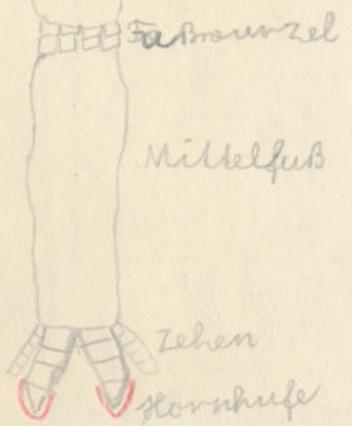


# DAS RIND



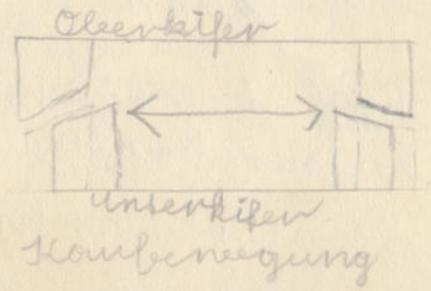
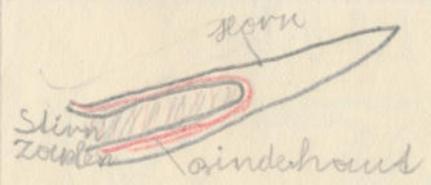
PAAR-  
hufe

U-Schenkel



PaNeBL

DARM  
22x Körpen  
länge

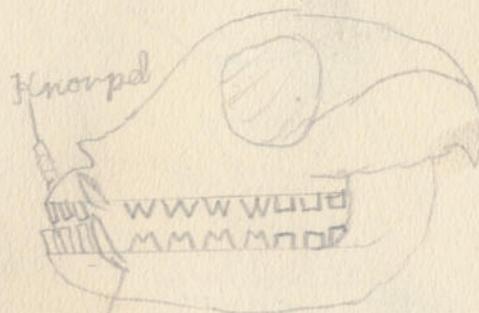


# HAUSSCHWEIN



verhindert  
Einsinken

Messfressen  
Bodenmühlen

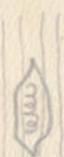


Knochen

Kauer

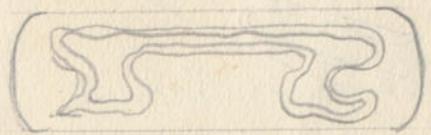


Porsten Schmelz  
80-500kg

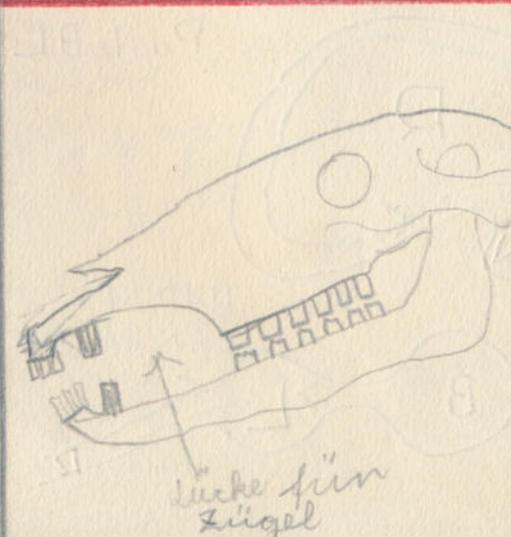


Trichinen  
im rohen  
Fleisch

# PFERD



Orakenzahn  
von oben  
klein Niederkäuer,  
kleiner Moigen,  
langen Darm.

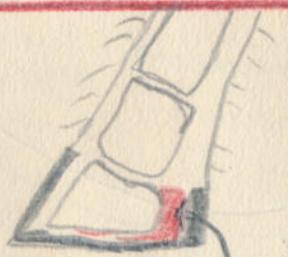


Lücke für  
Zügel



U Sch

MF



Polscher

Einhafer

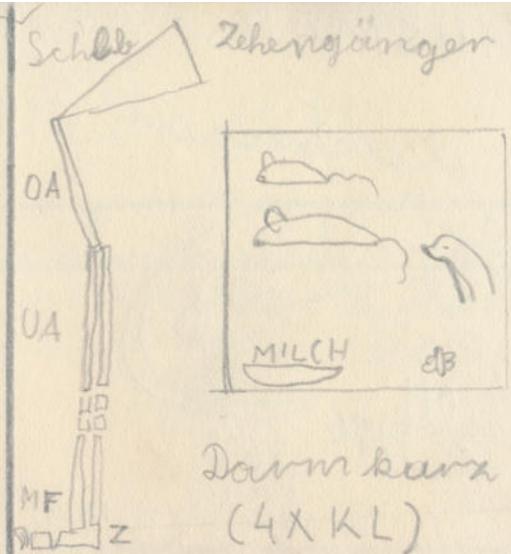
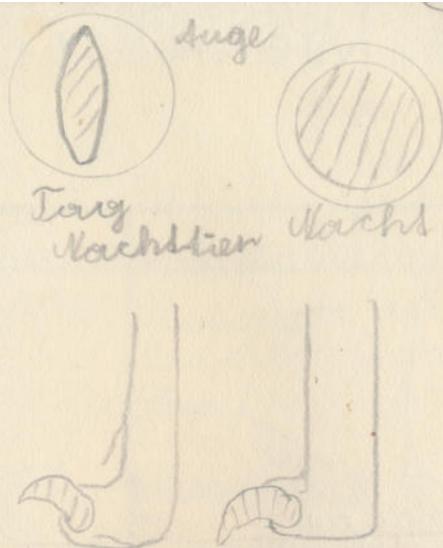


Horn-  
wand

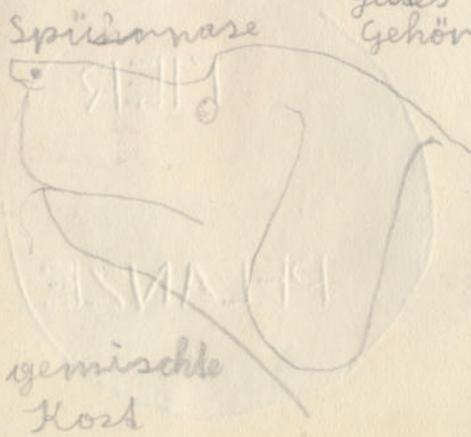
# KATZE



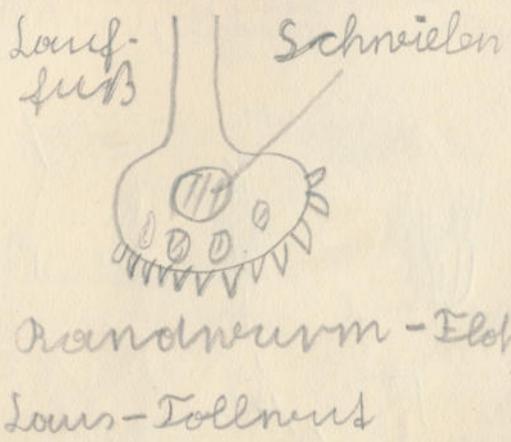
Fangzähne Reißzähne



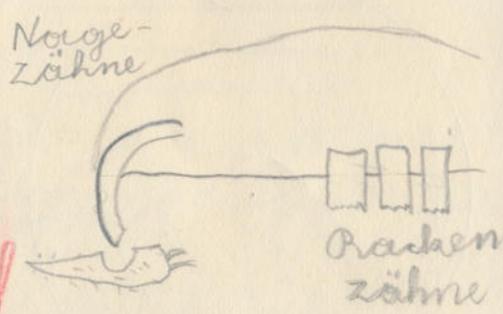
# HUND



gemischte Kost



# KANINCHEN



# HAUSMAUS

Allesfresser



Blinddarm  
Hüpf  
springt  
läuft

360

Nachkommen  
im Jahr

# WANDERRATTE

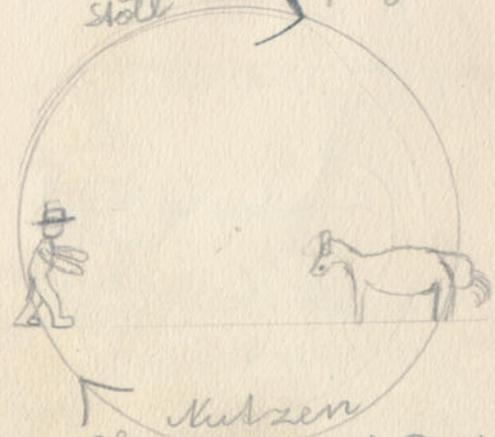


drüsen  
Leratin

# HAUSRATTE

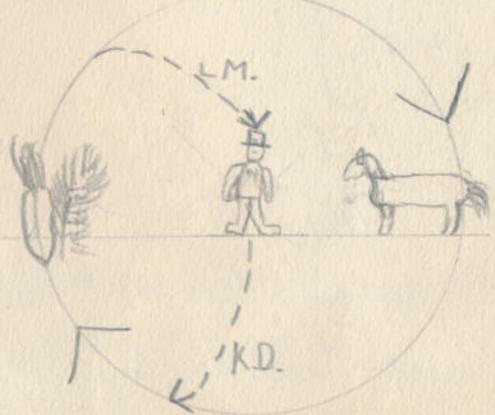
einheimisch  
Schwanz 16 cm  
Nind verdrängt  
860 Nachkommen  
40 Mill Schwaden  
überwiegend von  
Best Tuberkulose,  
Rau, Typhus Trichin  
Rostlauf u. a.

Futten  
Stall  
Pfleger



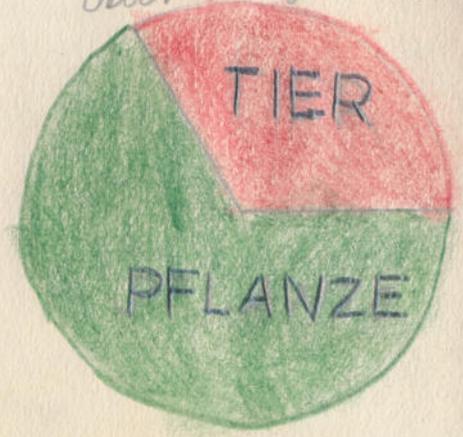
Nutzen  
Fleisch, Milch, Fell  
Rau, Zugkraft...

Futten



Düngen

Nahrungsmittel

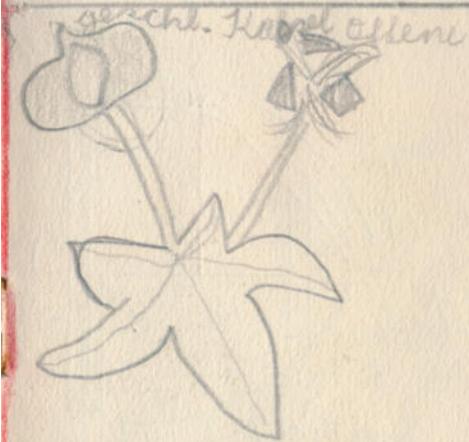


# FASERN

## NATÜRLICHE

## KÜNSTLICH

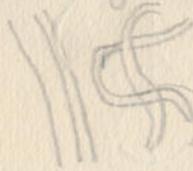
PFLANZL	tierisch	mineralisch	synthetisch	tierisch	mineralisch	Zus ges
Baumwolle Flachs Hanf Jute u.a.	Schafwolle Seide	Asbest	Kunstseide Zellwolle Papierf.	Eisfasern	Metallglaswolle	Perlon Nylon



## BAUMWOLLE



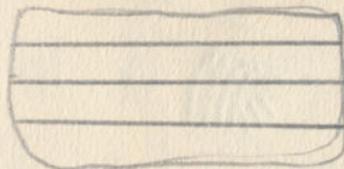
Samen mit  
Flughäaren 2-5cm



0,012 mm

0,04 mm

Mikroskop



Ballen (in Tulle)

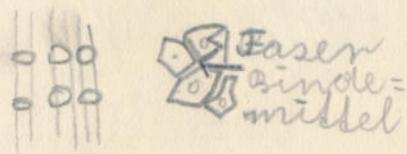
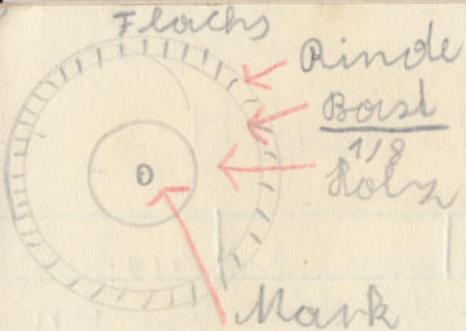
Amerika, Ägypten, Indien

230 kg 340 kg 180 kg

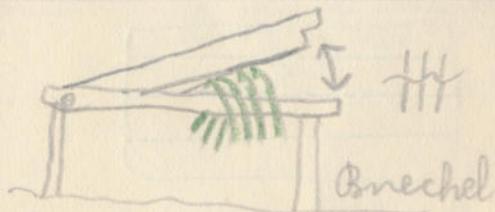
7 Mill \$ jährlich

55% aller Fasern,

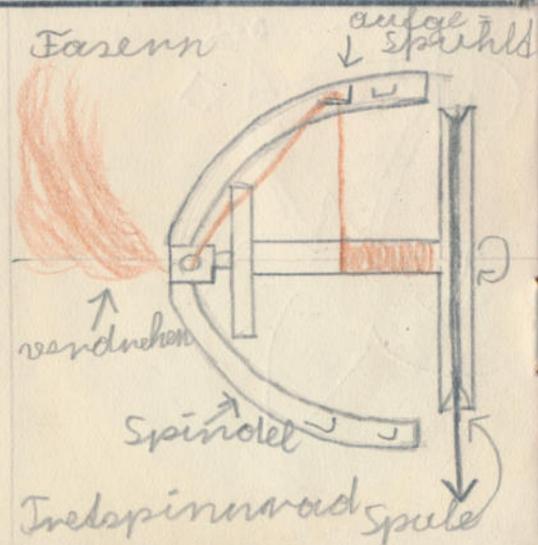
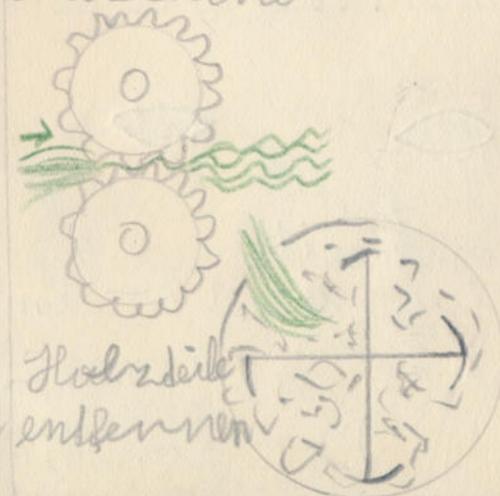
$\frac{3}{4}$  aller Menschen

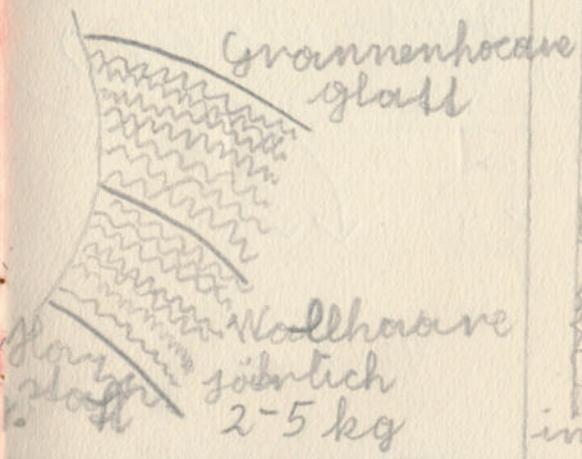


Flochs 30-150 cm → Leinwand,  
 Hanf 1-2 m → Schnüre, Seile,  
 Jute 2-3 m → Söcke, Tische,  
 Kokos 25 cm → Teppiche,  
 Manilahanf → Klettseile,  
 Sisalhant → Seile, Teppiche,  
 Seegrass → Matratzenfüllung



Maschine

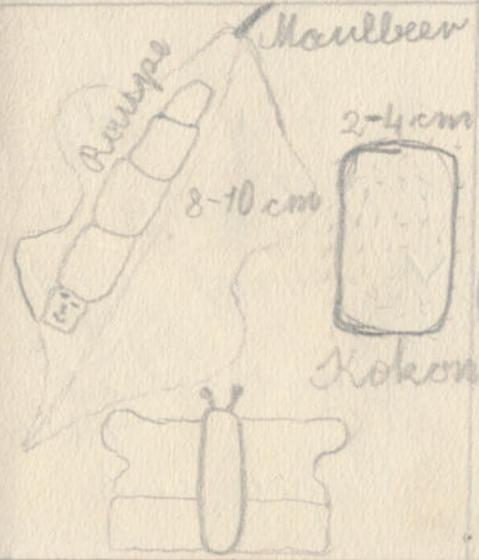




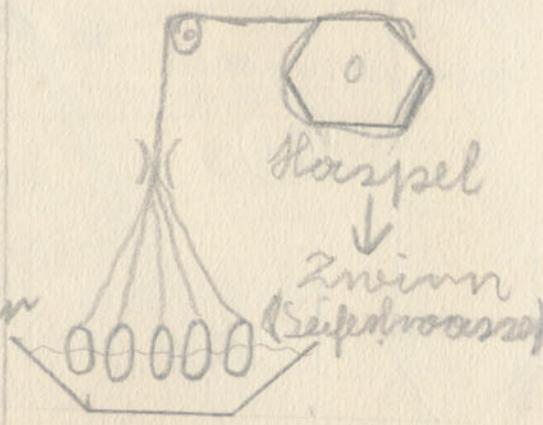
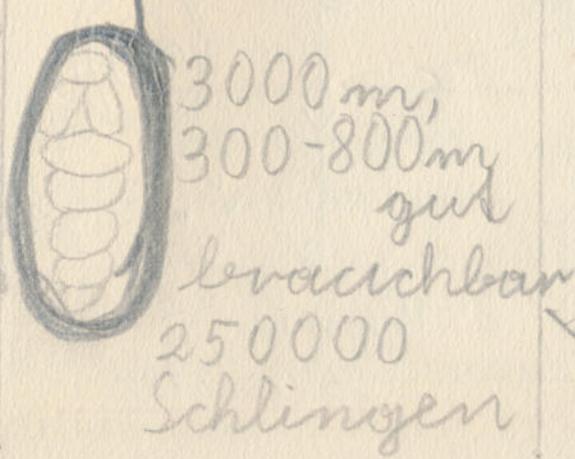
### Schafwolle

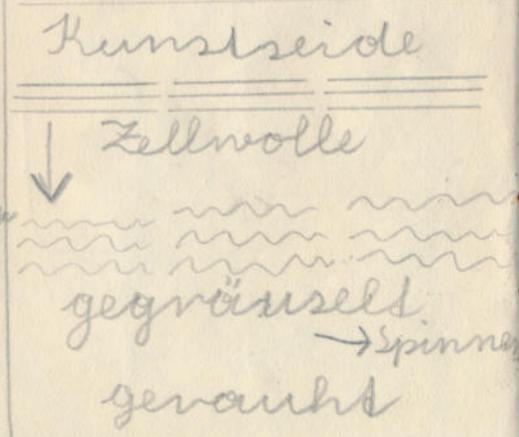
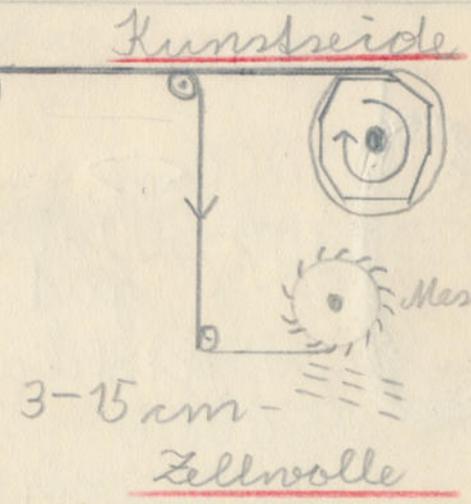
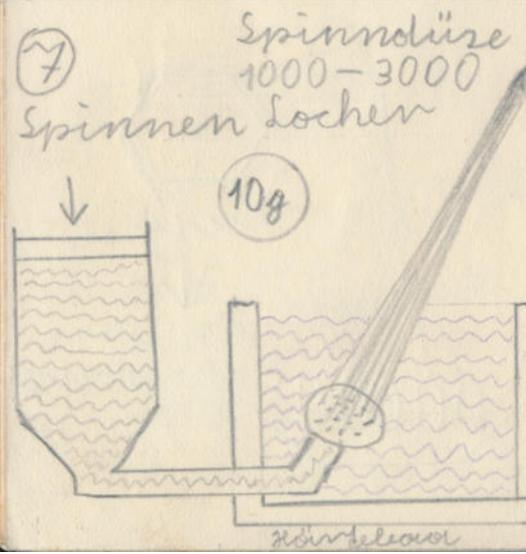
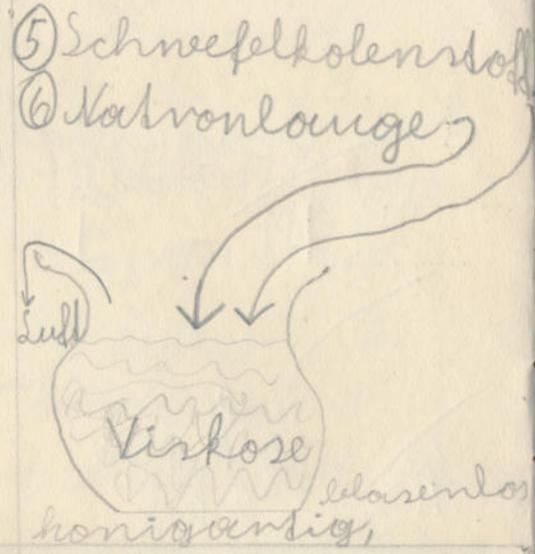
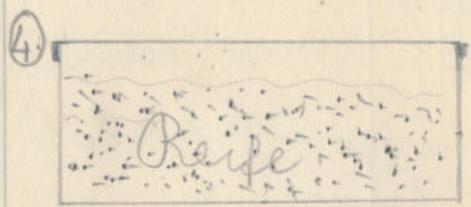
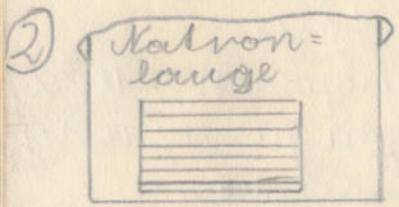
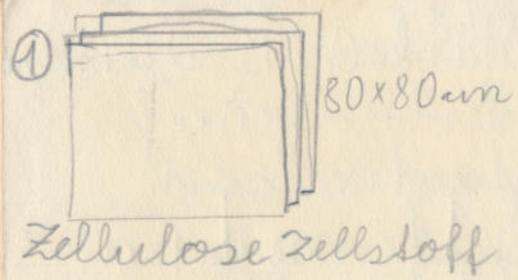


Stärke 0,015-0,04 mm  
 Merinoschaf,  
 Australien,  
 Südamerika,  
 Südafrika,  
 Europa,  
 Streichgarn-kurz,  
 Kammgarn-lang,  
 9-15 cm.

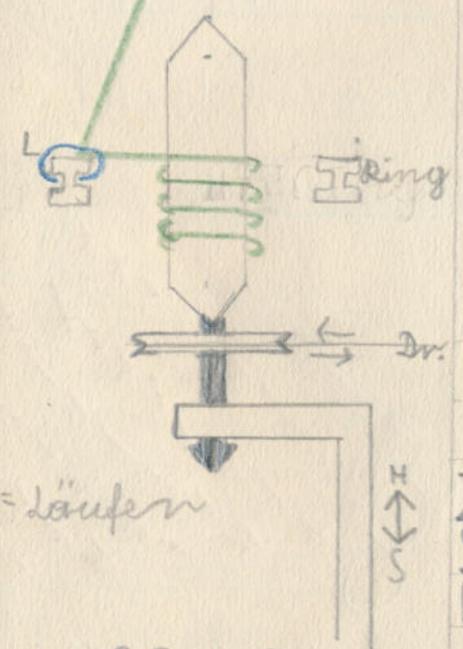
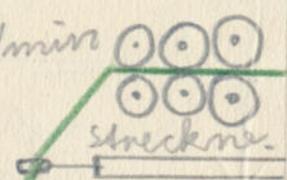


### Seide



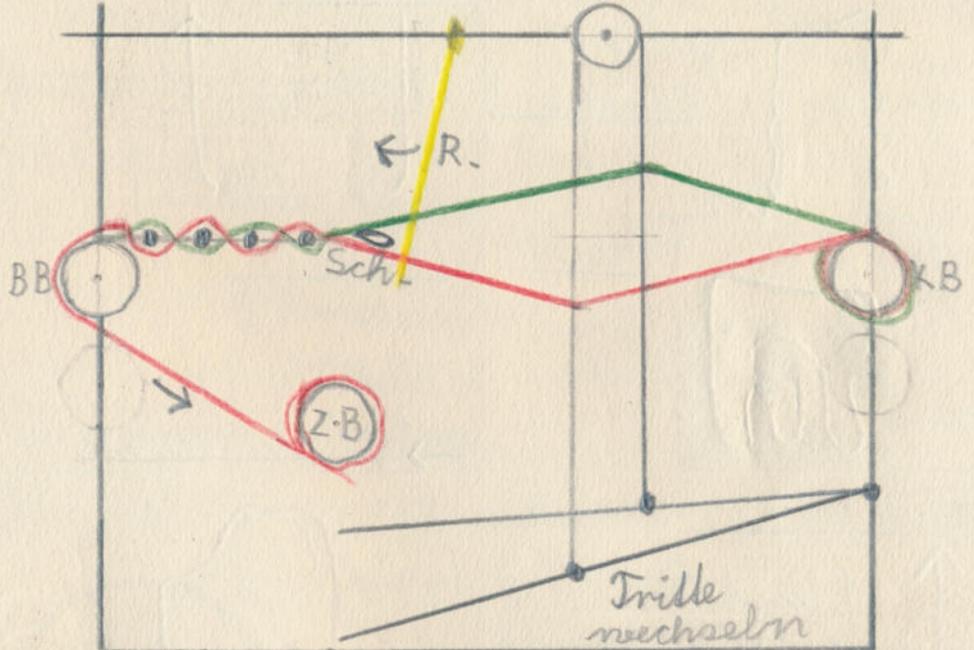


6000  
10000 U/min



RINGSPINDEL

# WEBSTUHL



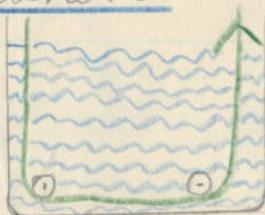
- KB Kettenbaum
  - BB Brustbaum
  - ZB Zergbaum
  - Schl Schifchen
  - R Rieblat (Kamm)
  - mechanischer 2-5 cm 30 cm l.
- Weberschiffchen
- Schützen
- Schubgarn



Knoten  
Löcher  
(Koppen)

GEWEBEVEREDELN

Bleichen



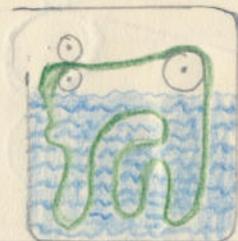
Chlor,  
Schwefel,  
Kalk.....



Scheren

Flammen

Senzen



Waschen

Seife,  
Soda,  
Wasser

Räucher



rauh

Fasern neeg-

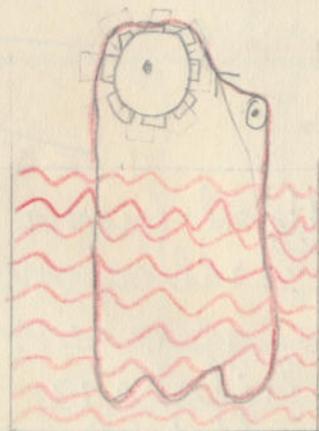
Impägnieren

Wasserdicht

Appretieren - Appretur

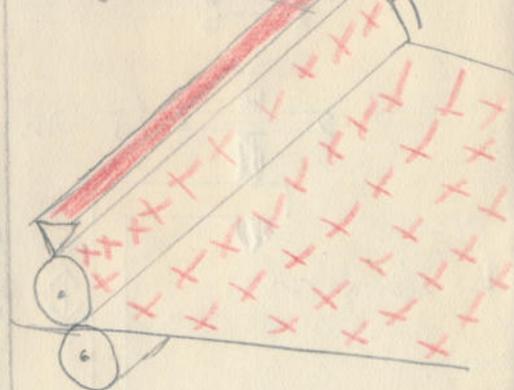


Kleister,  
Leim,  
Gummi,  
Kreide,  
Gips,  
Wachs,  
Seife, u. a.



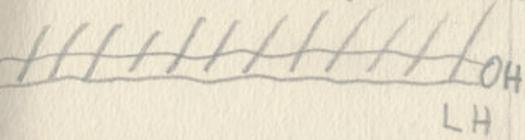
Färben: giftfrei,  
licht, weasch, -luftecht

Zugdruck

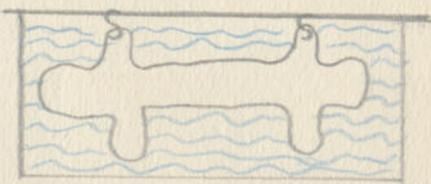


Mehrfarben:  
mehrere Walzen

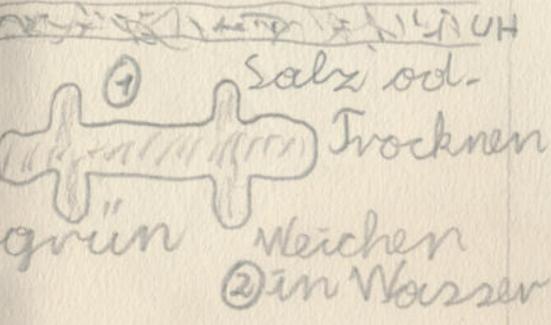
# LEDER-GEWINNUNG



③ Kalkmilch, Soda



⑥ Beizen  
verdünnte  
Säuren

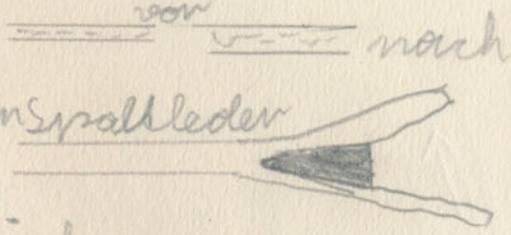


1-2 W

④ Enthausen Spaltleder

⑤ "Blöße"

⑤ Entfleischen

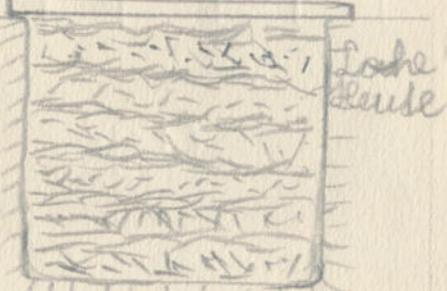


⑦ Loh-Gebrung

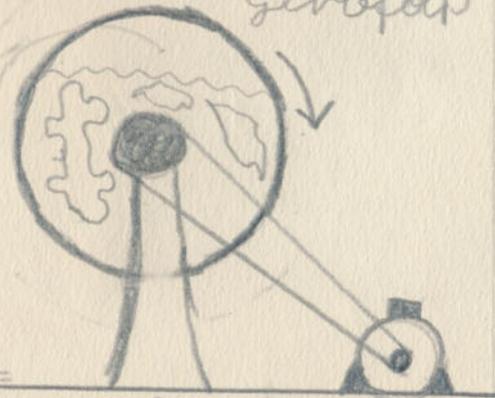
⑦ Schnell-Gebrung

⑧ Falzen

6-24 Monate



Gerbfaß



⑨ Waschen

⑩ Farben

Falten entfernen

Trocknen

Spannen

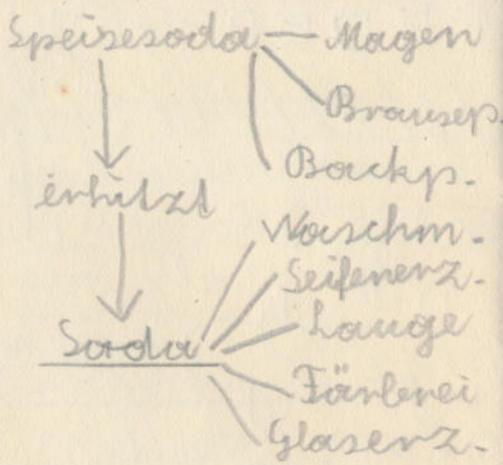
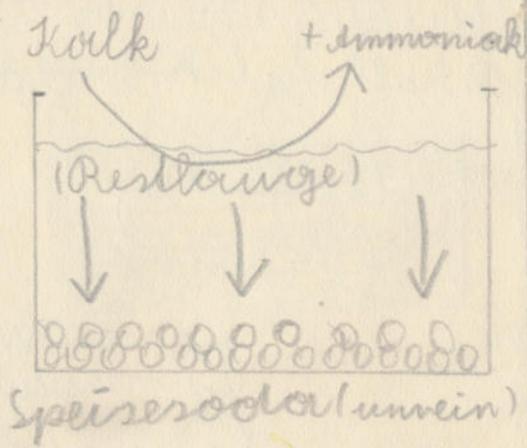
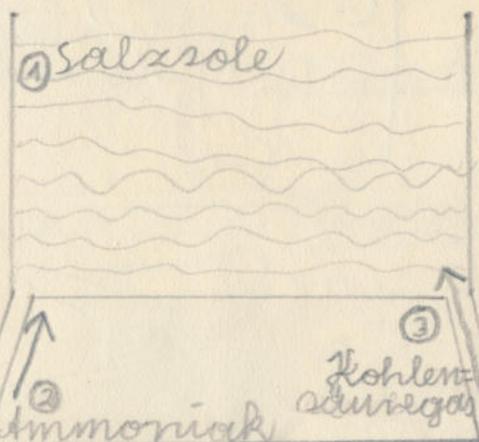
Glätten (Rollen)

Karben (Presse)

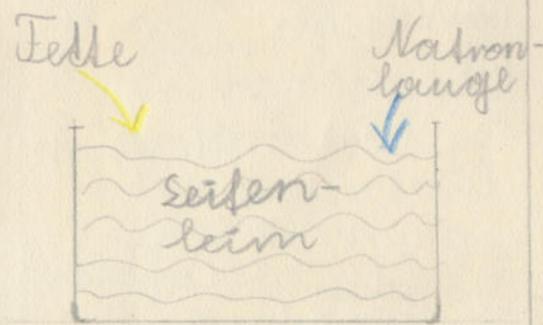
Loh = Eichen-Eichensrinde + Wasser

Chromsalz + Wasser  
6 St. - 2 Tage

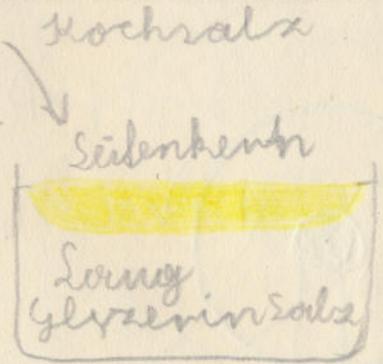
# SODA



# SEIFE



gekocht



Kohlauge + billige Fette = Schmierseife