

## Organic Lab., Univ. of Leiden, Holland.

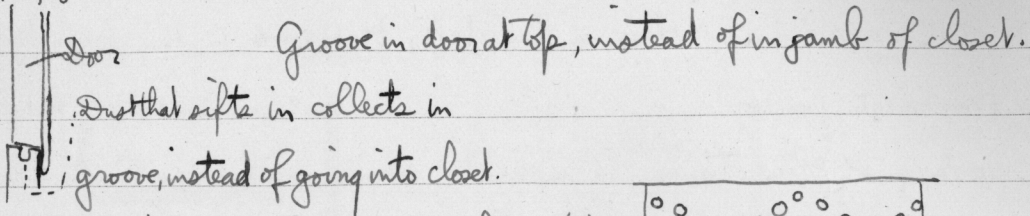
Prof. Dr. Franchimont, Director.

Dr. Montagne, Curator of Fine Products.

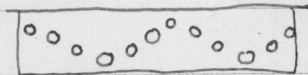
1. Wonderful cleanliness — separate rooms, with assistants for washing apparatus. Whole building for organic chem. exclusively.
2. Hoods specially adapted for working with dangerous substances.
3. For fractionally distilling liquids under practically an absolute vacuum, where water-pump is used — insert into system tube containing small piece of charcoal from which liquid air is continually evaporating — look this up. See Bonn.
4. Ullmann bomb-furnaces — benzene put into iron tube after putting in sealed tube. Head is then soldered on & solder kept cool by water circulating in jacket on head. Pressure outside & inside  $\therefore$  no explosions.
5. Usual bomb-furnace — inner air-chamber, by which ~~the~~ temp. can be controlled within  $1^\circ$ . Iron heads always screwed on outer tubes before starting the flames.
6. Electrical device for drawing curtains in lecture-room when lantern is to be used. Controlled from desk.
7. ~~Drawers of sand~~ Desks — Supplied with horizontal, sliding blackboard. Wood tops, covered with white paper which is changed every week. Drawers full of fine sand, with scoop, for putting out fires.

Closets.

Dust-proofing system.



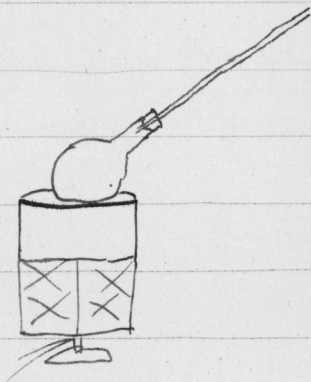
Arrangement of samples, as seen from top:



8. Closets — Made dust-proof by system of grooves. Floors of closets all raised above room-floor. All museum-bottles have glass caps.

9. Fused  $\text{CaCl}_2$ , in sticks, for drying liquids without great loss, as in granular  $\text{CaCl}_2$ .

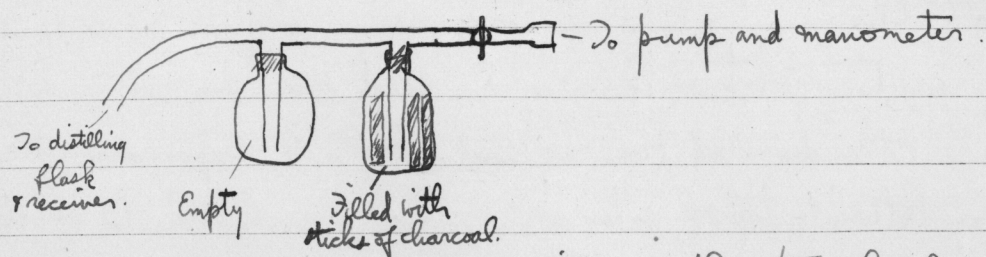
10. Apparatus for transferring an acid from its water solution to ether. Ether distilled from inclined flask, vapor ~~passed~~ condensed & passed from bottom to top of water soln. which was also heated on water?



Bonn. Friedrich-Wilhelm Universität.

Prof. Dr. R. Anschütz.

1. Liquid-air-attachment for vacuum distillation.



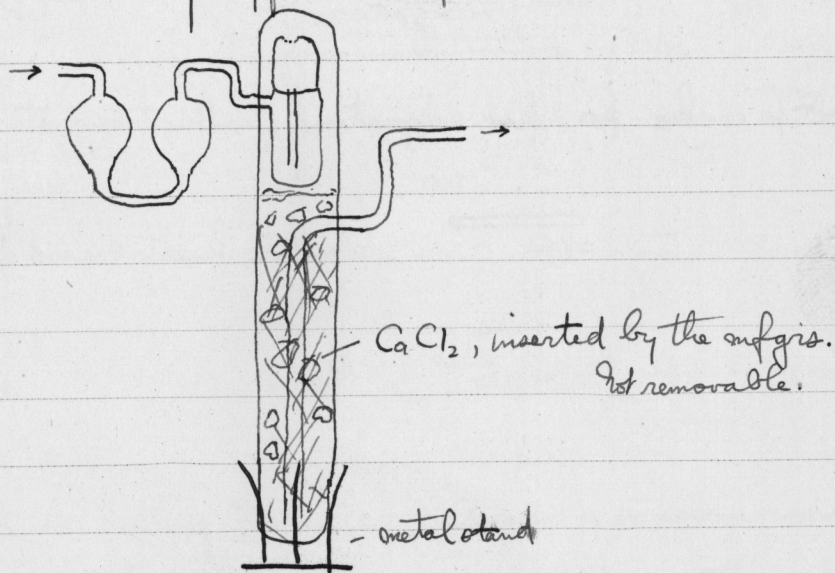
After exhausting most of air, immerse the two bulbs in Dewar flasks cont. liquid air. Charcoal takes up all air left.

2. Lead-covered laboratory tables. In use 20 yrs.

Heidelberg

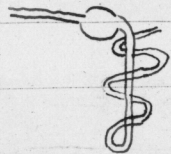
Universität

1. Glass water-pumps exclusively.
2. New  $H_2O$  absorbing apparatus for C and H detns.

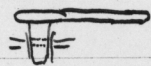


NÜRNBERG - Bavarian Chem. Techn. Labs.

1. Winkler coils for absorption & washing



2. Stop cocks for fine adjusting (combustions, etc.)

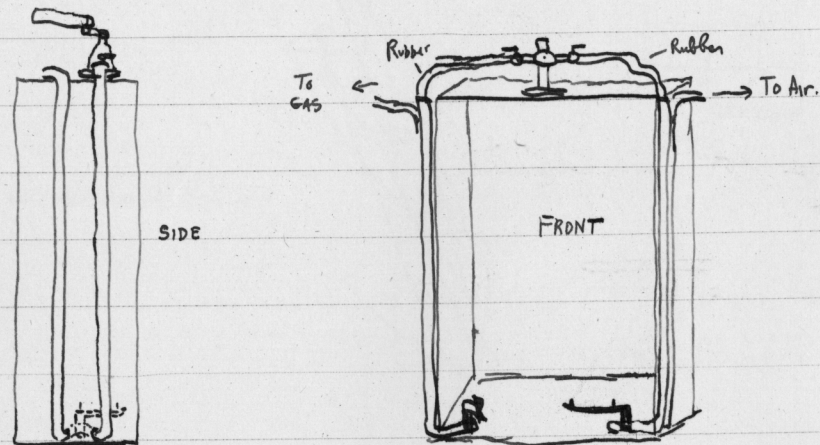


- glass tube fused to one end of handle.

STRASSBURG - KAISER WILHELM UNIV.

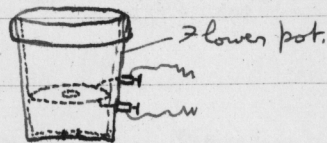
CHEM. INST., PROF. Dr. THIELE.

1. TABLE FOR BLAST LAMP. (made out of packing case)



Complete regulation by means of the feet.

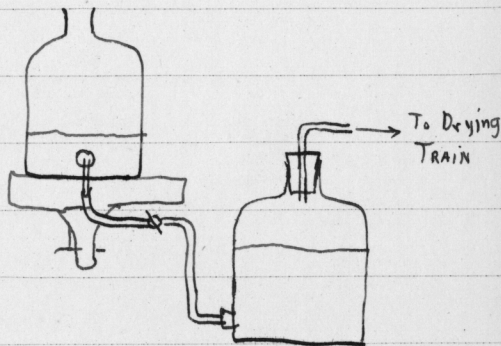
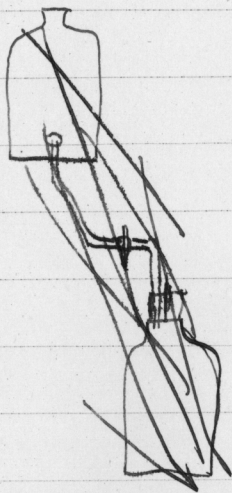
2. Air-bath for heating funnels. Asbestos or porcelain rings at top. Hot plate furnished by German Company. Also used these plates for anal. wt. det. by Beckmann b.p. method



3. For Combustion Room -  $O_2$  piped direct from bomb (through valve reducing pressure to 30mm. Hg) (and through am. furnace cont. tube w. red hot  $CuO$ ) to combustion ~~tube~~ trains. Pipes must not be Zn lined, as  $Zn(OH)_2$  formed by moist  $O_2$ . Stop cock connections to drying trains must be glass, as brass cocks can not be

made sufficiently tight. No gasometers in combustion room.

System for air —

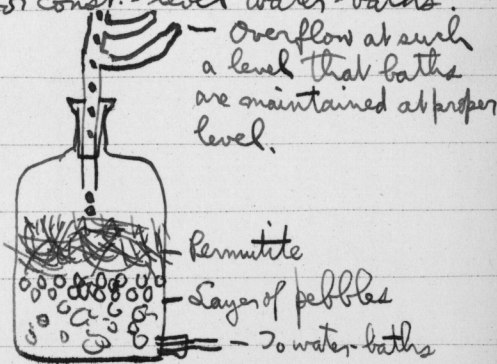


When lower bottle full, positions are merely exchanged.

4. Large glass  $H_2S$  app. (nach Küster). Requires filling once every semester.

5. For hard water, use a permutite filter for const.-level water-baths. Saves wear on them — no coatings formed.

Remove filling and leave over night in salt water when necessary.



6. Apparatus for vacuum pump with "Normalochliffe" so that every piece fits into every other piece, making many combinations possible.