A Lover's Guide to the Package Factory **Ana Iwataki**

A Selection from *Notes for Package Factory* **Benjamin Reiss**

published on the occasion of

Benjamin Reiss
Package Factory (Natural Marriage of Natural Resources)
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> *To be at all critically, or as we have been fond of calling it, analytically, minded—over and beyond an inherent love of the general many colored pictures of things—is to be subject to the superstition that objects and places, coherently grouped, disposed for human use and addressed to it, must have a sense of their own, a mystic meaning proper themselves to give out: to give out, that is, to the participant at once so interested and detailed as to be moved to a report of the matter.*
>
> HENRY JAMES

> *3. Or again, instead of trying to define the other ("What is he"), I turn to myself: "What do I want, wanting to know you?" What would happen if I decided to define you as a force and not as a person? And if I were to situate myself as another force confronting yours?*
>
> ROLAND BARTHES

Package Factory (Natural Marriage of Natural Resources) explores the process of making card-backed blister packages, used for selling batteries, toys, chapstick, pens, and a great many other quotidian items. Like most of the objects or processes BR engages with in his sculptures, a blister pack is so ubiquitous as to be invisible. Even the pointing out of its name, that it has a name—blister package—is to shine a light into dark corners of our world that are ignored for efficiency, for sanity. He has broken down this process into the following four steps: the making of flexography ink, the making of paperboard, the making of the plastic polyethylene terephthalate, and the making of graphic design decisions. They are bound together in a game of chutes and ladders.

> *A commercial package is a site of complex social compromise. It's a restrictive membrane, a sealed paywall seeming to contain an untouched, irreducibly special substance, whatever the product. As gatekeeper it's authoritative (apparently there for practical reasons,) delimiting a basic, daily space of desire...*
>
> BENJAMIN REISS

BR begins projects with a period of extensive research, which has as much to do with

trying to piece together a complete picture of the mechanics and mechanisms of these often obscure processes as it does with engaging with the dry language of didactic material. The attempt to understand begins here—with rigorous research into the science that is only helped along and not defined by a delight in the accidental poetics of definitions, diagrams, and scientific explanations. What became first apparent is the sheer difficulty of accessing these processes, which make up a hidden yet essential layer of activity in the functioning of our world. Our daily remove from the industrial, chemical, and otherwise basic yet outsourced processes becomes a central concern. The rigor necessary to even attempt to bridge this gap reveals our constant and unconscious distancing from the mundane, the ugly, and the destructive. Popularized or even linear explanations don't exist for most of these systems; they had to be pieced together and BR's sources range from academic papers to the websites of companies specializing in discrete industrial processes.

BENJAMIN REISS

Why do some systems feel like golems, untethered to founding intentions? I'm not all cynical, despite the monster reference. Structures of compromise bind us together and can be exquisite contortions of subtlety, genius, and sacrifice. I wonder, though, when compromise accommodates millions, whether the expression of an individual's desire is diluted to abstraction, unrecognizably flimsy, fleeting.

Such sources, along with straightforward descriptions when they can be found, become the didactic foundation for the poetic and metaphoric tangents that guide BR's own processing. The formation of metaphors becomes lubricant for the ingestion of concepts. Swallowing information to digest knowledge.

ROLAND BARTHES

This leads to what we must call the Poetics of the Encyclopedic image, if we agree to define Poetics as the sphere of the infinite vibrations of meaning, at the center of which is placed the literal object. We can say that there is not one plate of the Encyclopedia which fails to vibrate well beyond its demonstrative intent. This singular vibration is above all an astonishment. Of course, the Encyclopedic image is always clear, but in a deeper region of ourselves, beyond the intellect, or at least in its profile, certain questions are born and exceed us." Consider the astonishing image of man reduced to his network of veins; here anatomical boldness unites with the greater poetic and philosophic interrogation: What is it? A thousand names rise up, dissolving each other: a tree, a bear, a monster, a hair shirt, a fabric, everything which overflows the human silhouette, distends it, draws it toward regions remote from itself, makes it overstep the divisions of Nature; yet, just as in the sketch of a master, the swarm of pencil strokes finally resolves into a pure and exact form, perfectly signifying, so here all the vibrations of meaning concur to impose a certain idea of the object…

BR's work could be described as an exploration of the mechanics of understanding but he would probably call it our limited capacity to understand, or even the failure of understanding. Intimate relational, political, economic, and emotional frameworks are built into a complex body for containing and constructing knowledge. His mother's nose sculpted from memory, a stopwatch from childhood, a "living royal infant" lifted from Malevich, and other such "anecdotes, stories, and lies that form around a subject and help to position it someplace"[1] are scattered throughout the factory.

BR has an incredible capacity for linguistic and visual puns, for word play, image play. More than cheap tricks, they belie a flexibility in his apprehension of the world, an alchemical ability to liquefy a thing's structure or representation to give it a new and stranger form. For BR, playing is like knowing in that they are both "means of rehearsing primal and possible selves at a safe remove from the world." It freaks him out as much as it fuels him.

> *I cannot hope to seize the concept of it except "by the tail": by flashes, formulas, surprises of expression, scattered through the great stream of the Image-Repertoire; I am in love's wrong place, which is its dazzling place.*
>
> ROLAND BARTHES

BR and I recently saw Gustave Moreau's *Salome Dancing Before Herod* in a Los Angeles museum. We spent a long time looking at it. I don't remember his exact phrasing, but he eventually observed that Moreau must have been moralizing decadence, that the extreme abundance of jewels and flowers and textures of richness and Salome's ambiguous allure could only have been a condemnation of this luxury. For a moment I felt ashamed of my own luxuriating in the painting. I remembered this a few days later during a conversation in his studio. The PET ladder showing crude oil's journey to polyethylene terephthalate alludes to the visual language of the modernist synagogues of BR's childhood, perhaps most obviously in the color-coded distillation column. Along the side of this column are "bronze" icons indicating the uses for the different distillates (roofs and roads, ships, jet fuel, plastic, etc.) The network of machines, facilities, and processes blossomed into a "garden of delightful fruit," whose beauty for BR exacerbates his shame in the privileged remove of seeing these extremely destructive forces as symbols or diagrams. Not yet metaphor, they are vehicles for information but not sentiment or experience.

> *Blessed are You, Lord our God, King of the universe, Who fashioned man with wisdom, and created within him many openings and many cavities. It is obvious and known before Your throne of glory, that if but one of them were to be ruptured, or but one of them were to be blocked, it would be impossible to survive and to stand before You. Blessed are You, God, Who heals all flesh and acts wondrously.*

[1] Peter Wachtler on his own work, quoted here: Schillinger, Jakob. "Interiority Complex: Jakob Schillinger on the Art of Peter Wachtler." Artforum, vol. 53, no. 3, Nov. 2014.

This is a translation of a Jewish blessing recited after urination or excretion. BR and I are fascinated by it.

The graphic design decision-making ladder begins with carrots: their growth stages and processing into baby carrots, their consumption and digestion by the graphic designer who uses them as fuel. BR speaks of the varying attention excesses and deficits that guide his understandings. This was the ladder I could most intuitively understand, because I have something of an attention excess to questions of ingestion and digestion.

For me, consumption has everything to do with understanding. I recognize that there is, of course, a limited capacity in the knowledge we choose and the knowledge we retain. The enormity of the world is such that we would die of the roar were we to try to know and see and feel it all at once. I remember BR telling me how he began making the sculpture *Jet Engine* (2016). We had often talked about the feeling of Saturday afternoons during our Los Angeles childhoods, a specific nostalgia that certain tricks of light or the sound of wind chimes could conjure up. He described hearing jet engines passing overhead, another phenomenon so ubiquitous as to be invisible. He spoke of this sound as soothing background noise, like wind in the trees. Jets passing over LA natives playing in their yards. He went on to talk about this sound as one of violence—the sound of American imperialism, the sound of incredible environmental damage. But how could you let yourself feel those things, ongoing war and our collective carbon footprint, every time you heard a plane passing? A healthy brain has an incredible capacity to forget as well as retain.

J.E. CIRLOT

Now, what we have said about landscapes in dreams can be applied also to an actual landscape, seen and selected by an automatic response of the unconscious, which detects in it an affinity that gives us pause and makes us return to it again and again.

Selective knowledge, for BR, is perhaps the heart of the problem.
For me, it's just the heart.

I've written elsewhere about approaching art as a selfish lover. By no means encyclopedic, not quite specialized, but desirous. Voraciously, greedily, consummately.
This is the only way I know how to know.

MARTHA RONK

Nothing has an essence of its own, but is what it is only in relation to all that is around. This awareness is often unconscious, sometimes highly philosophical and sophisticated, liberating or embarrassing. Each shift, each bend of one's

body turns out to be related to the potency of objects. Sometimes, objects create violent disturbances, especially those occurring by "chance"...

The workers manning the assembly areas on the top of the sculpture were among the very last elements to be made. Almost everything is handmade, which itself becomes a process of knowing through the body—an extended and intimate engagement with the materials used and represented. BR and I spoke on the phone one evening while he made their tiny hands. He said they were becoming something unexpected. Soon after I saw the finished sculpture. The little worker-men were haunting, fixed in their eternal tasks of processing and making.

The man who contemplates is 'absorbed' by what he contemplates; the 'knowing subject' 'loses' himself in the object that is known... The man who is 'absorbed' by the object that he is contemplating can be 'brought back to himself' only by a Desire; by the desire to eat, for example.... Desire is what transforms Being, revealed to itself by itself in (true) knowledge... revealed to a 'subject'... The (human) I is the I of a Desire or of Desire.

ALEXANDRE KOJÈVE

I think about making to understand. I think about choosing to understand. I think about selecting entry points into the wider world. I think about intimacy and knowing the world via an initial other. I know a lot about blister packages now.

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A Selection from *Notes for Package Factory*

Benjamin Reiss

Chemical Pulping

Separating **Lignin** (Cross Linked Phenolic Organic Polymers → structural in support tissues of plants/algae →
- Cell walls in wood & Bark
- Second Most abundant organic polymer on earth
  20-35% dry mass of Wood
- Many industrial uses (eg- as lignosulfonates from sulfite pulping)
  ≈ Environmentally sustainable dust suppression agent for roads
- Arboform by Tecnaro → plastic, injection moldable & combustable)
- Biofuels...

FROM

Cellulose
- a polysaccharide, linear chain of 100's → 1,000's of linked D-glucose units.
- Structural component in cell walls of green plants, algaes & oomycetes (?)
- MOST ABUNDANT ORGANIC POLYMER ON EARTH
- Content in wood: 40-50% (in cotton Fiber: 90%)
- Paper/board, cellophane, rayon
- Biofuels: cellulosic ethanol
- In Humans, acts as an HYDROPHILIC BULKING AGENT FOR Feces, often referred to as "DIETARY FIBER"

DIGESTION

Dissolving lignin in cooking liquor, washing it away from the cellulose
→ Preserves Length of Cellulose fibres
→ Lignin deteriorates over time

3 Main CHEMICAL Pulping Processes:

- Sulfite process - from 1840's, dominant until WWII
- Soda Pulping - for Straws, "bagasse" & hardwoods w/ high silicate content
- Kraft Process - invented 1870's, most commonly used now → a main advantage is that the chemical reaction w/ lignin Produces Heat which can be used to run a generator → either making net Contribution to grid, or used to run an adjacent paper mill.

(pulping)

KRAFT PROCESS...

DIGESTERS - HOT & PRESSURISED

WOOD CHIPS ABSORB THE PULPING LIQUOR INTO THE HOLLOW LUMEN OF THE FIBER, WHICH ACTS AS CONDUIT FOR LIQUOR AS IT DID FOR THE TREE'S SAP. IT PASSES THROUGH MICROSCOPICALLY POROUS CELL WALL & ATTACKS LIGNIN RICH MIDDLE LAMELLA THAT HOLDS FIBERS TOGETHER.

- IF PULP IS USED FOR BOARD GRADE OR OTHER UNBLEACHED PAPER, IT IS THEN WASHED TO REMOVE RESIDUAL LIQUOR, THEN TO REFINING.

LIQUOR IMPREGNATION WITH BLACK & WHITE LIQUOR

IMPREGNATION CAN BE DONE BEFOR OR AFTER CHIPS ENTER DIGESTER

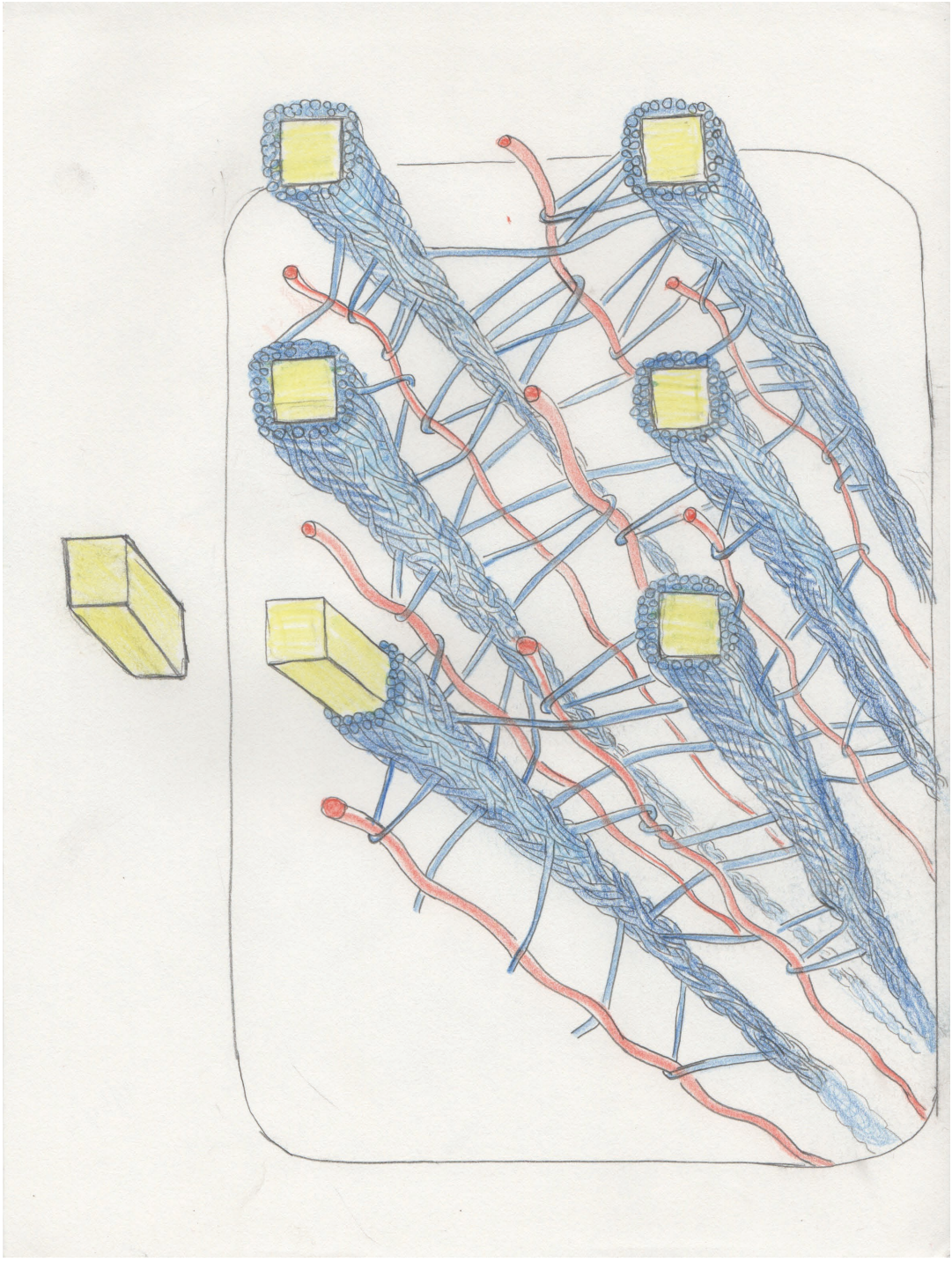
The cooking Liquor consists of mixture: white Liquor
water in the chips
condensed steam
Weak black Liquor

The cooking Liquor penetrates into the capillary structure of the wood
Chemical reactions begin
(Appx. 40-60 % of alkali consumption (in continuous process) occurs in impregnation zone.)

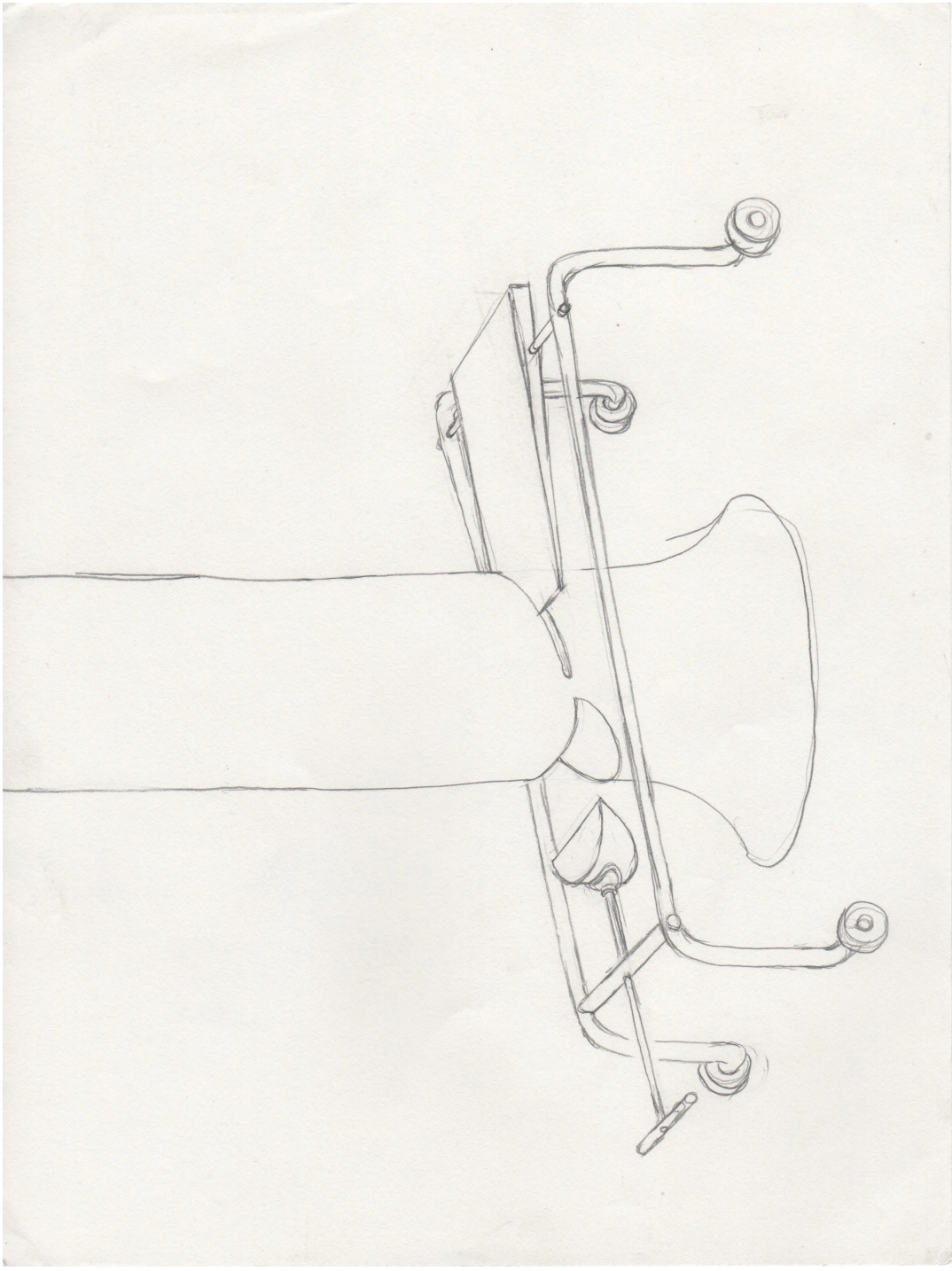
⇩

COOKING IN PRESSURIZED DIGESTERS (some Batch, Some Continuous)
Typically delignification requires several hours at 170°-176°C / 338°-349°F
Lignin & Hemicellulose degrade to Fragment that are SOLUBLE in the strongly basic Liquid.
The SOLID pulp is collected & washed. It's called "BROWN STOCK"
The Combined LIQUIDS are BLACK LIQUOR (containing LIGNIN fragments
carbs from hemicellulose
Sodium Carbonate
Sodium Sulfate & other inorganic salts)

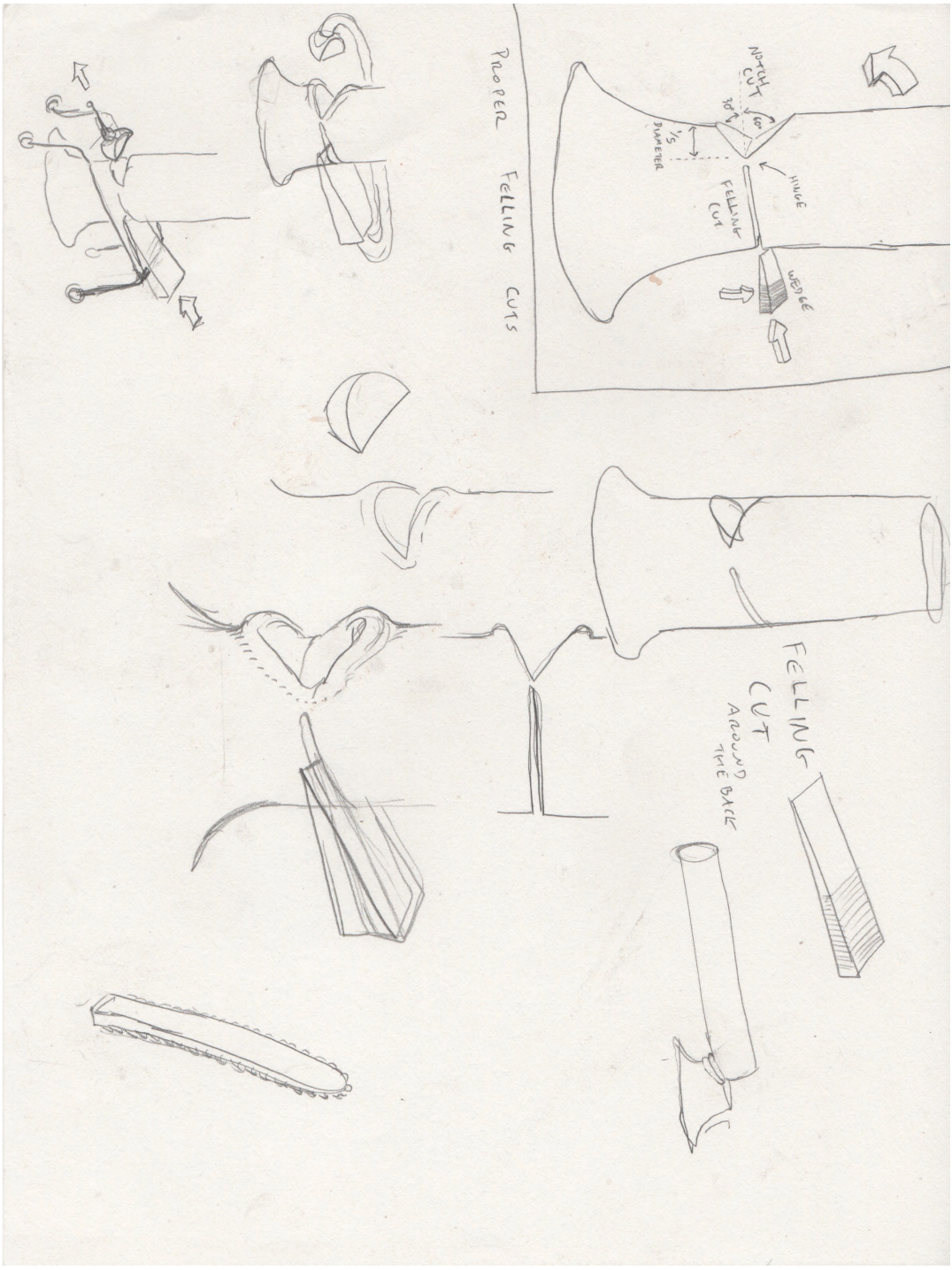
(kraft process)



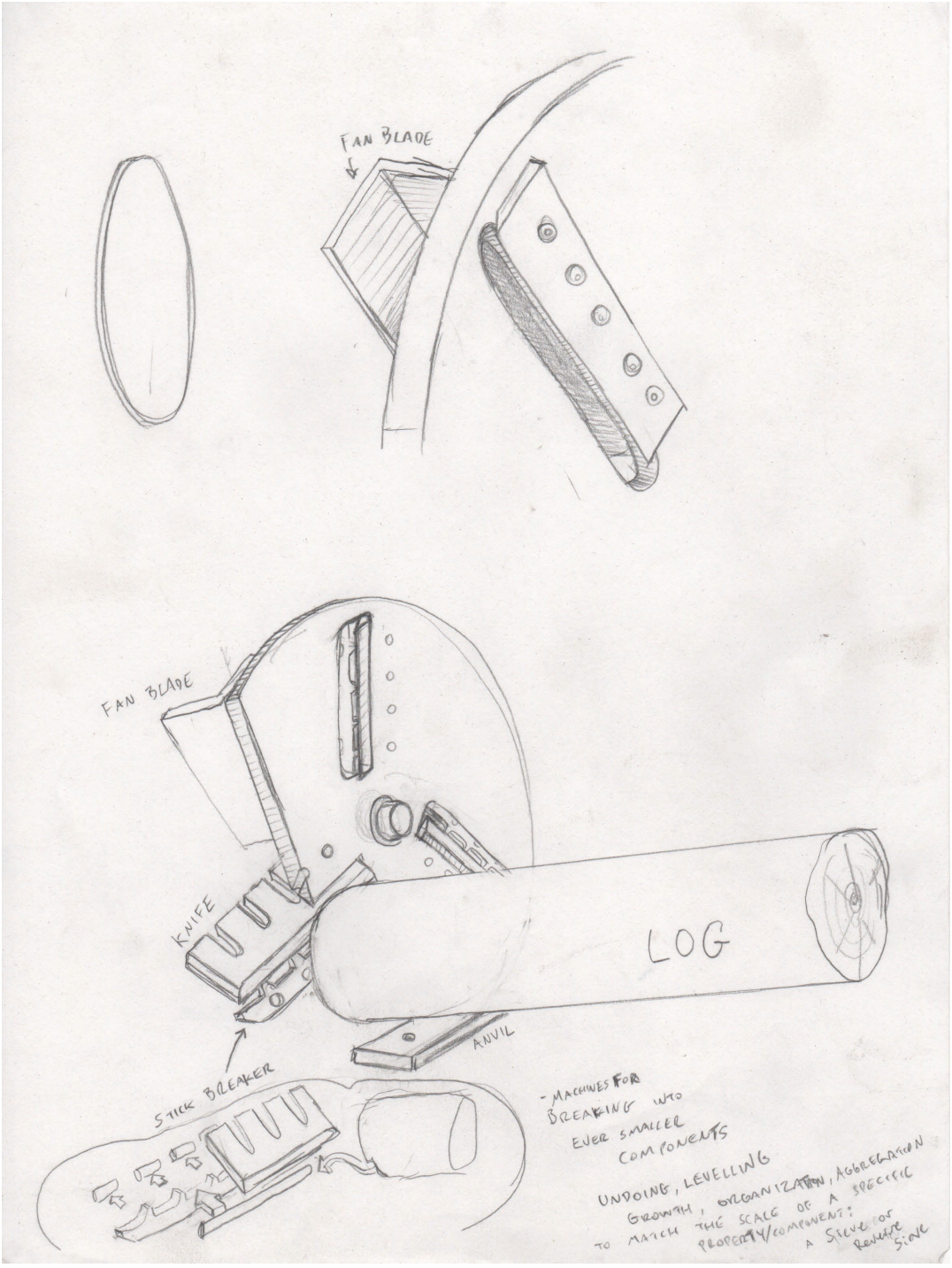
(lignin & cellulose)



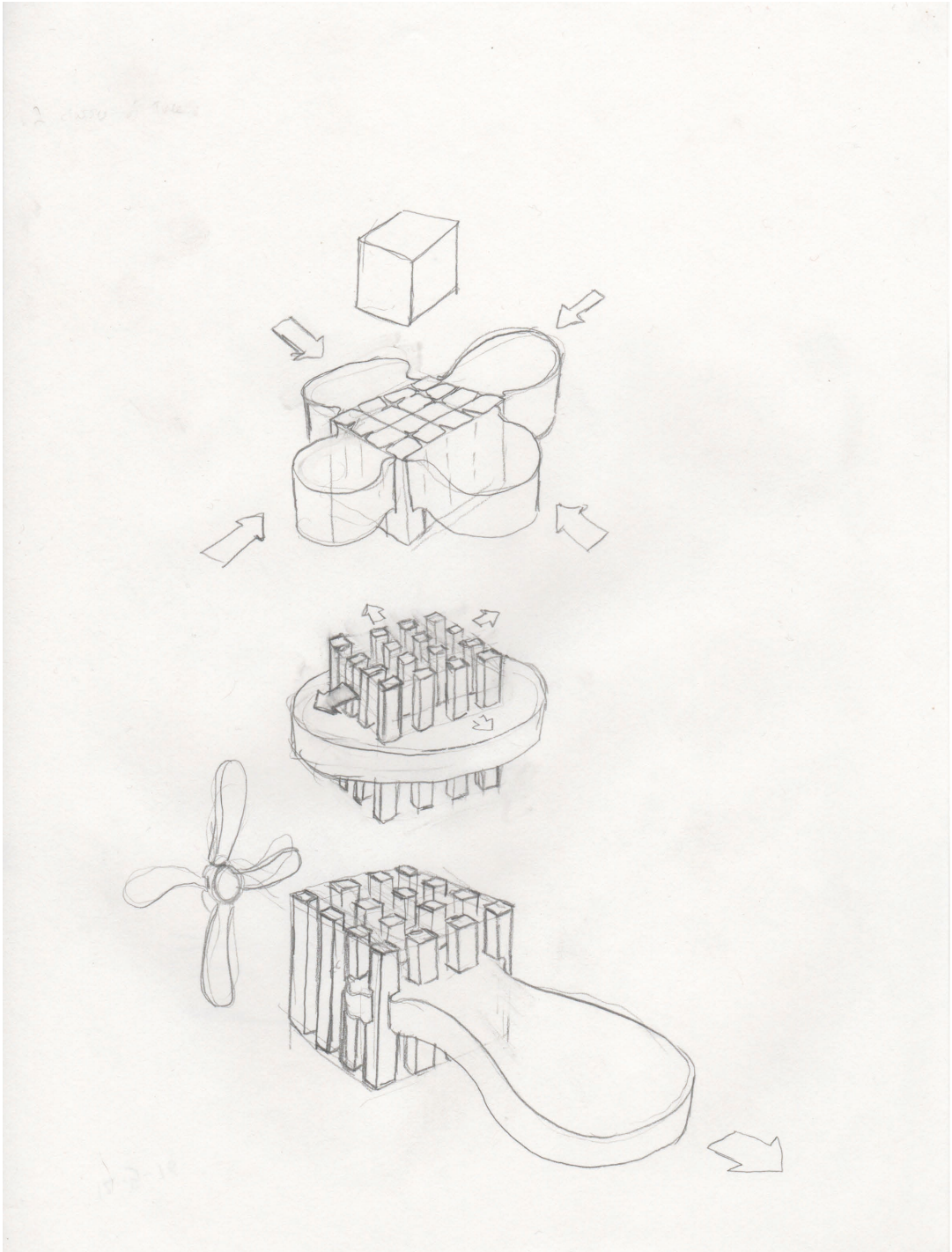
(felling)


PROPER FELLING CUTS
NOTCH CUT
60°
30°
1/5 DIAMETER
HINGE
FELLING CUT
WEDGE
FELLING CUT
AROUND THE BACK

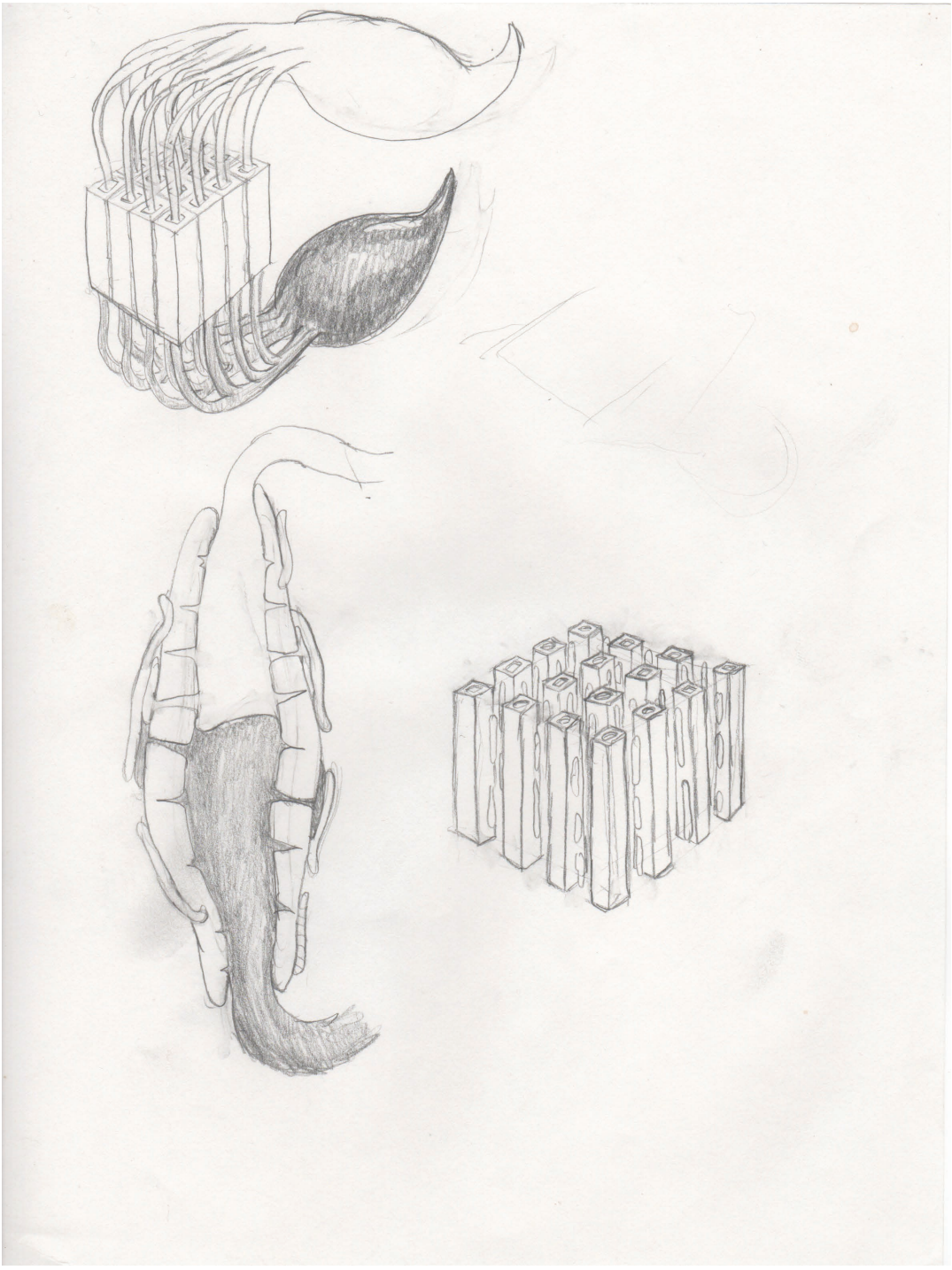
(felling)


FAN BLADE
FAN BLADE
KNIFE
LOG
ANVIL
STICK BREAKER
- MACHINES FOR BREAKING INTO EVER SMALLER COMPONENTS
UNDOING, LEVELLING
GROWTH, ORGANIZATION, AGGREGATION
TO MATCH THE SCALE OF A SPECIFIC PROPERTY/COMPONENT:
A SIEVE OR RENAME SIEVE

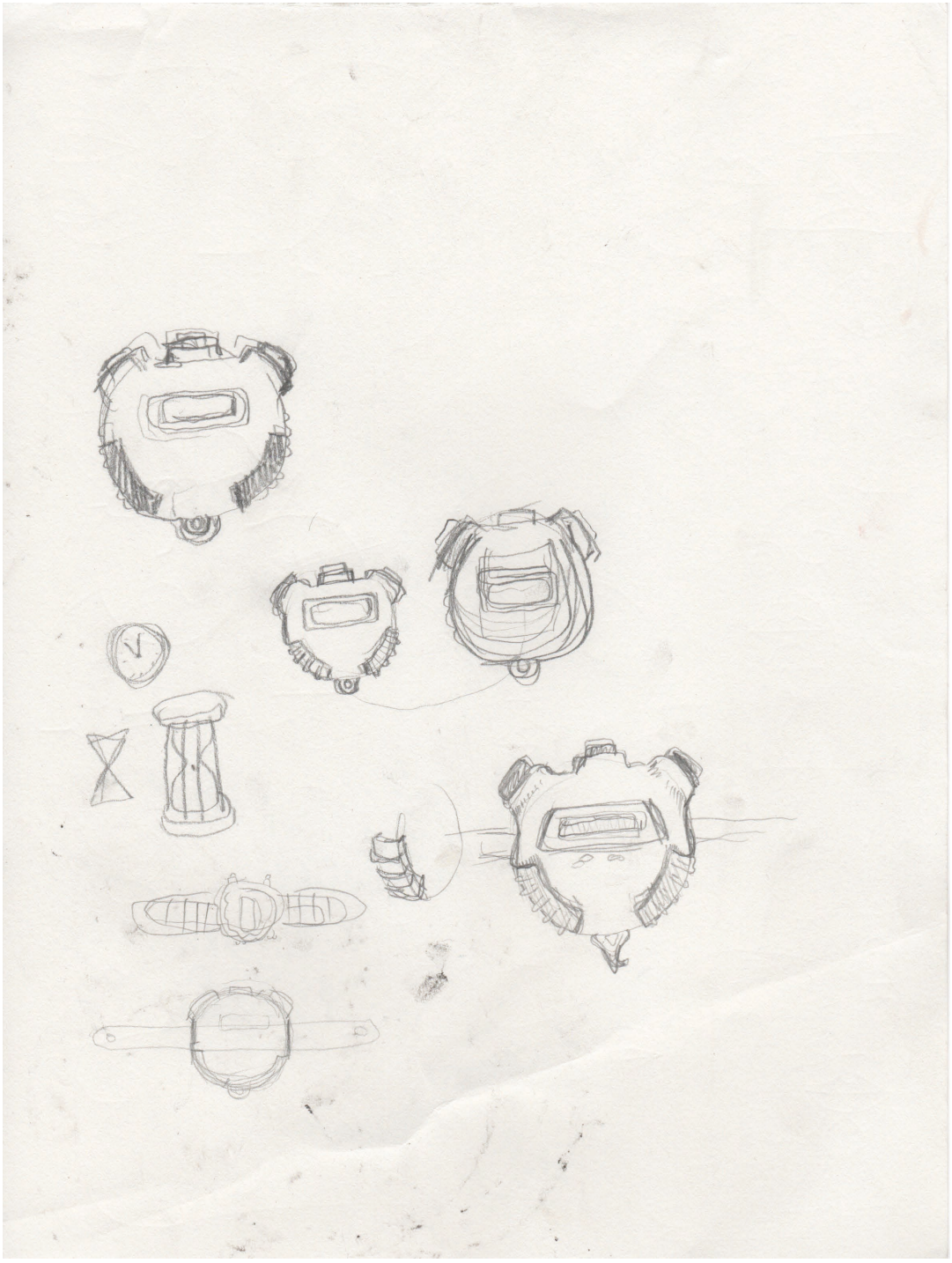
(chipper)



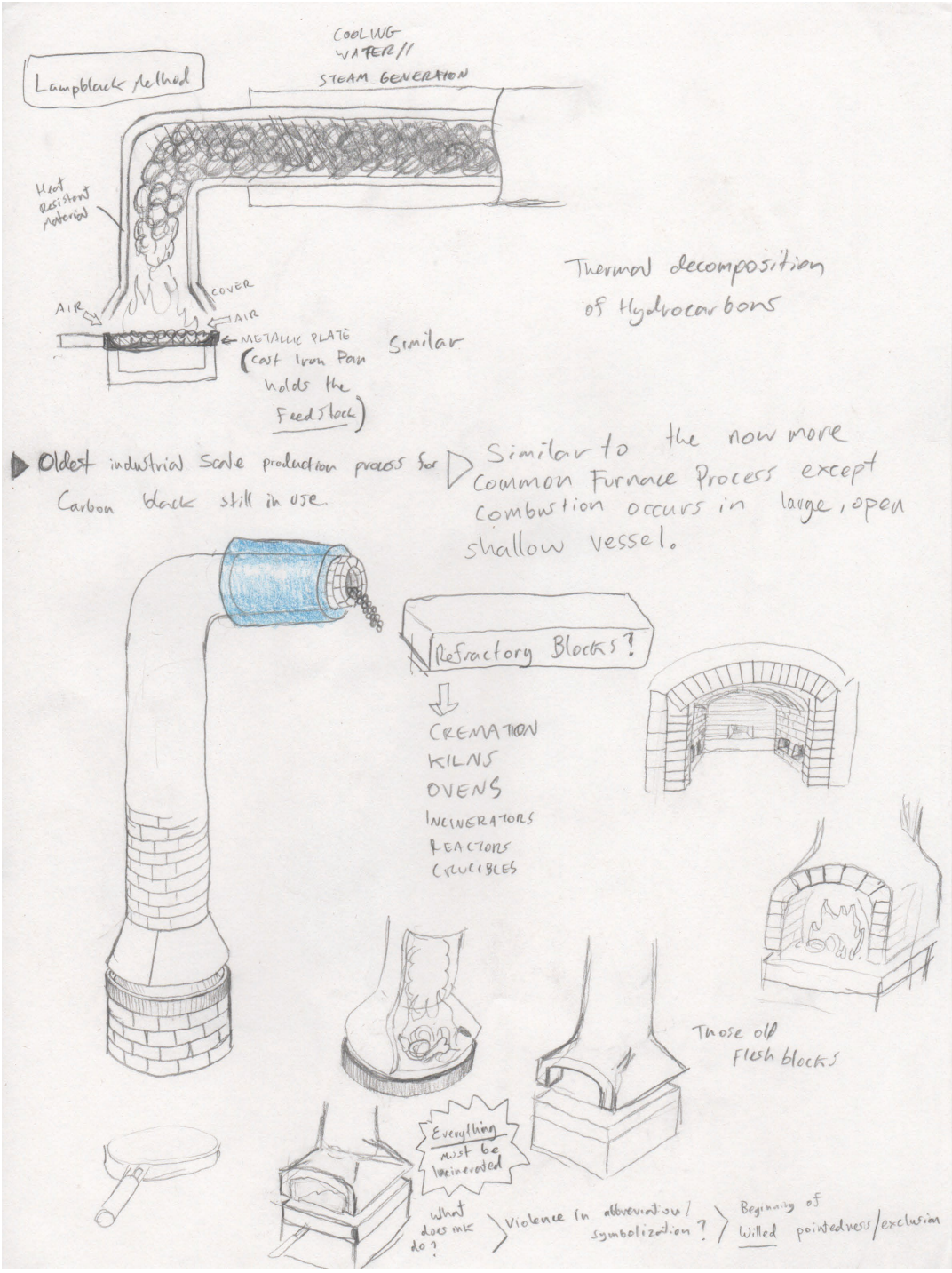
(impregnating the fibers)



(impregnating the fibers)



(stopwatch)



(lampblack furnace)

Digestion in small intestine

Food spends 3-6 hours in Small I
Localized contractions of (circular) muscle in intestinal wall (process called SEGMENTATION) optimizes digestion & absorption. Rhythmic Peristalsis Contractions also seen, pushing matter along.

Utilizes Enzymes from 2 sources:

- PANCREATIC JUICE
- BRUSH BORDER ENZYMES - attached to microvilli that project from epithelial cells that small intestine

(Bile has no enzymes, but still plays a key role)

When Chyme arrives in duodenum, triggers release of 2 hormones:

- Cholecystokinin (CCK) } By intestinal wall. These stimulate Pancreatic Juice Secretion
- Secretin

Pancreatic Juice enters through Ampulla of Vater, contains many enzymes ((protein-digesting PROTEASES not activated until they reach intestine)) → prevents self-digestion of pancreas

CCK also stimulates release of bile

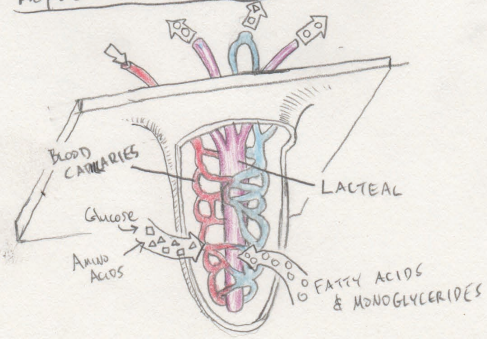
bile salts emulsify fat globules in food, breaking them up into tiny droplets. > better for Pancreatic Lipase to digest the fat.

Digestion by Brush Border Enzymes yields molecules small enough to be absorbed by villi FOR SUGARS: BBEs are Maltase, Sucrase, Lactase

Glucose & other simple sugars, amino acids & nucleic acid breakdown products are carried through cells covering villi, pass into blood capillaries inside them, carried to Hepatic Portal Vein to liver for processing.

Fats (Fatty Acids & Monoglycerides) → into epithelial cells of villi where they're converted into triglycerides (oils) → to LACTEALS (tiny branches of Lymphatic system) → to bloodstream

VILLUS



(digestion)

(pancreas & gall bladder)

GUTS

Intestines make up appx 80% of length of alimentary canal. - lined w slippery mucous membranes secretes lubricating mucus
- Muscle (longitudinal & circular) to push food/waste.

Small Intestine

longest & most important part of Alimentary canal 20-23 ft.
1" dia

Duodenum - 10" long, receives partially digested food (chyme),
- bile product of liver → from gall bladder along the common bile duct
- enzyme containing Pancreatic Juice from Pancreas

Common Bile Duct & Pancreatic Duct merge just before entering small intestine - products flow through common opening.

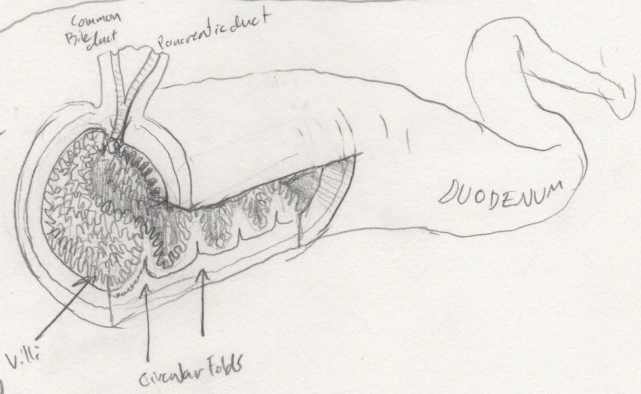
Jejunum - 8' long

Ileum - 12' : where most absorption takes place

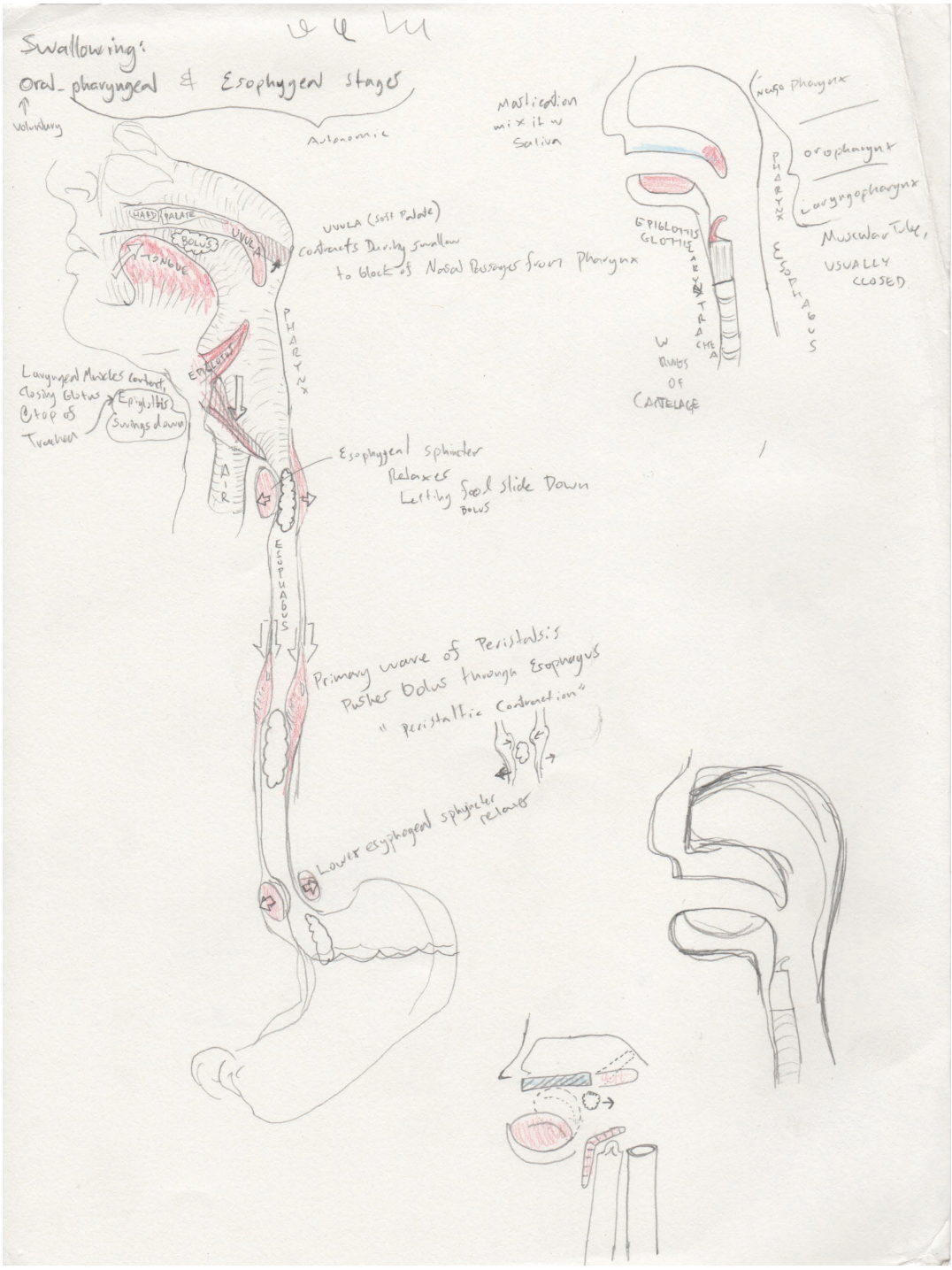
Effective absorption increased by 3 structural features: → Give small intestine 2,150 sq feet of surface area!

1. Circular Folds
2. Villi
3. Microvilli:

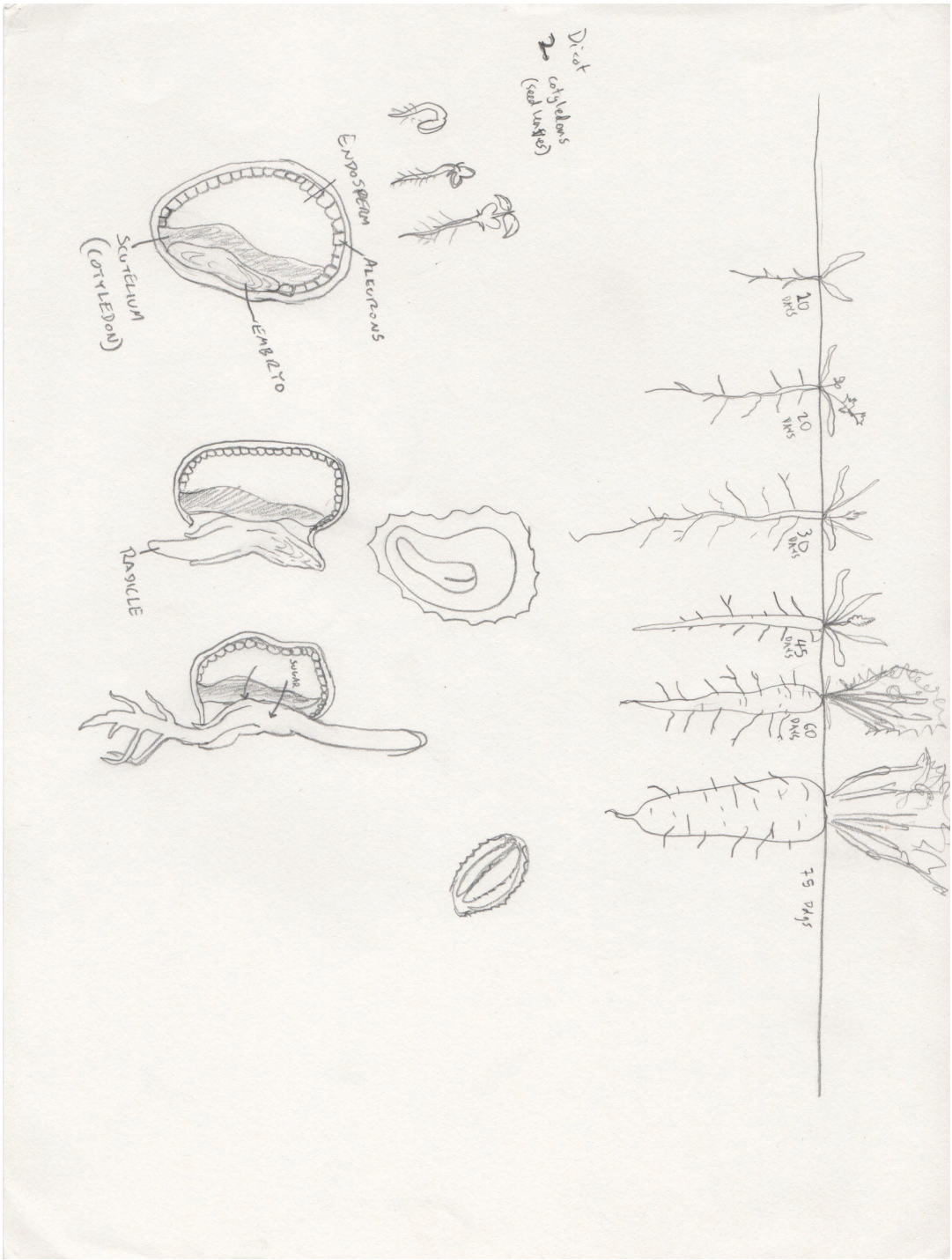
microscopic folds that cover the outer surfaces of intestinal cells - including those covering the villi - & convey digestive BRUSH BORDER ENZYMES that complete final stages of digestion.



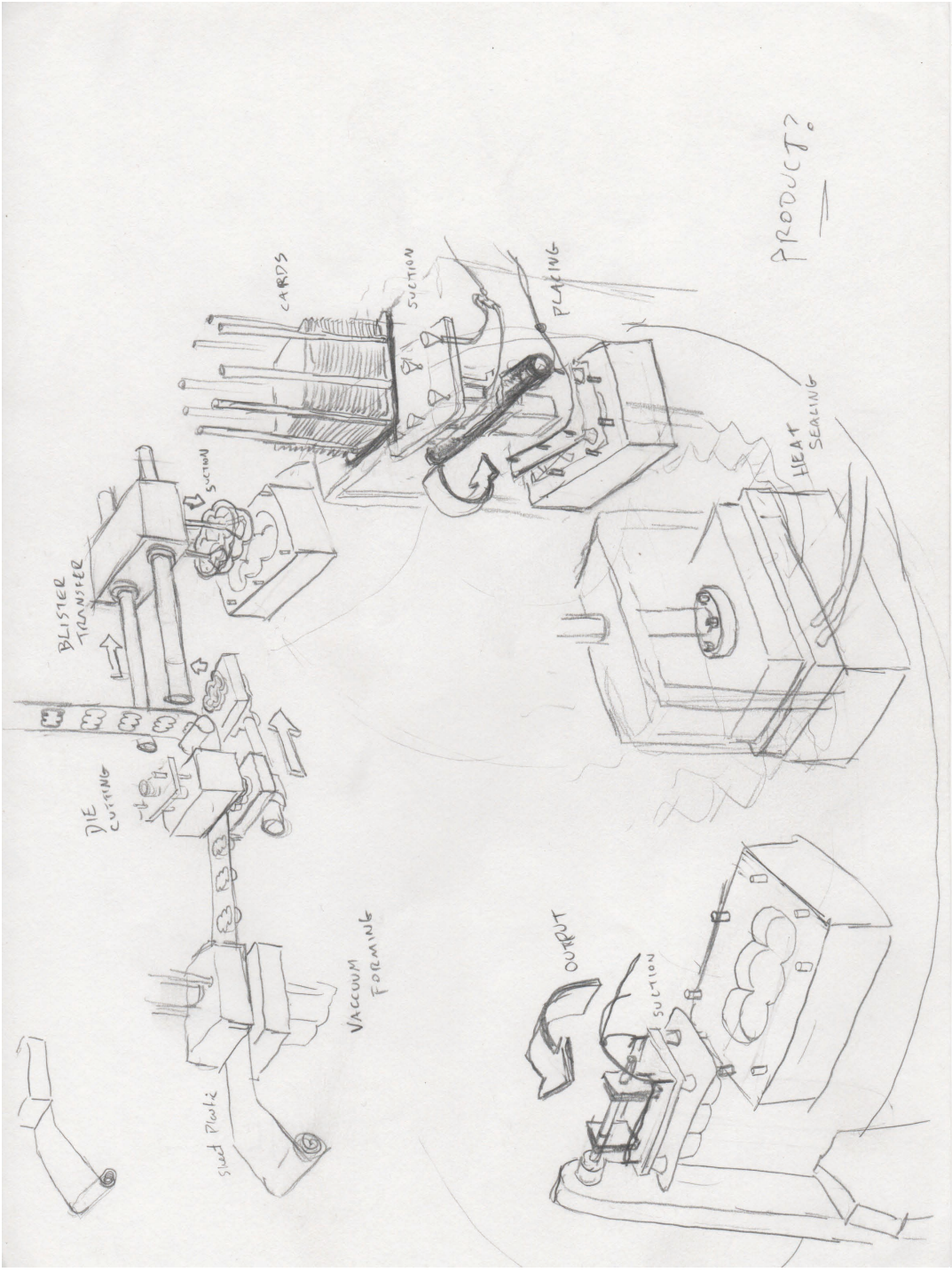
(guts)


Swallowing:
Oral-pharyngeal & Esophygeal stages
voluntary
Autonomic
Mastication
mix it w
Saliva
HARD PALATE
BOLUS
UVULA
TONGUE
UVULA (soft Palate)
Contracts During swallow
to block of Nasal Passages from Pharynx
PHARYNX
Epiglottis
Laryngeal Muscles contract
closing Glotus
Top of
Trachea
Epiglottis
Swings down
AIR
Esophageal sphincter
Relaxes
Letting food slide Down
Bolus
ESOPHAGUS
Primary wave of Peristalsis
Pushes Bolus through Esophagus
" peristaltic Contraction"
Lower esophageal sphincter relaxes
Naso Pharynx
oropharynx
Laryngopharynx
PHARYNX
ESOPHAGUS
Muscular Tube,
USUALLY
CLOSED
EPIGLOTTIS
GLOTTIS
LARYNX
TRACHEA
W
RINGS
OF
CARTELAGE

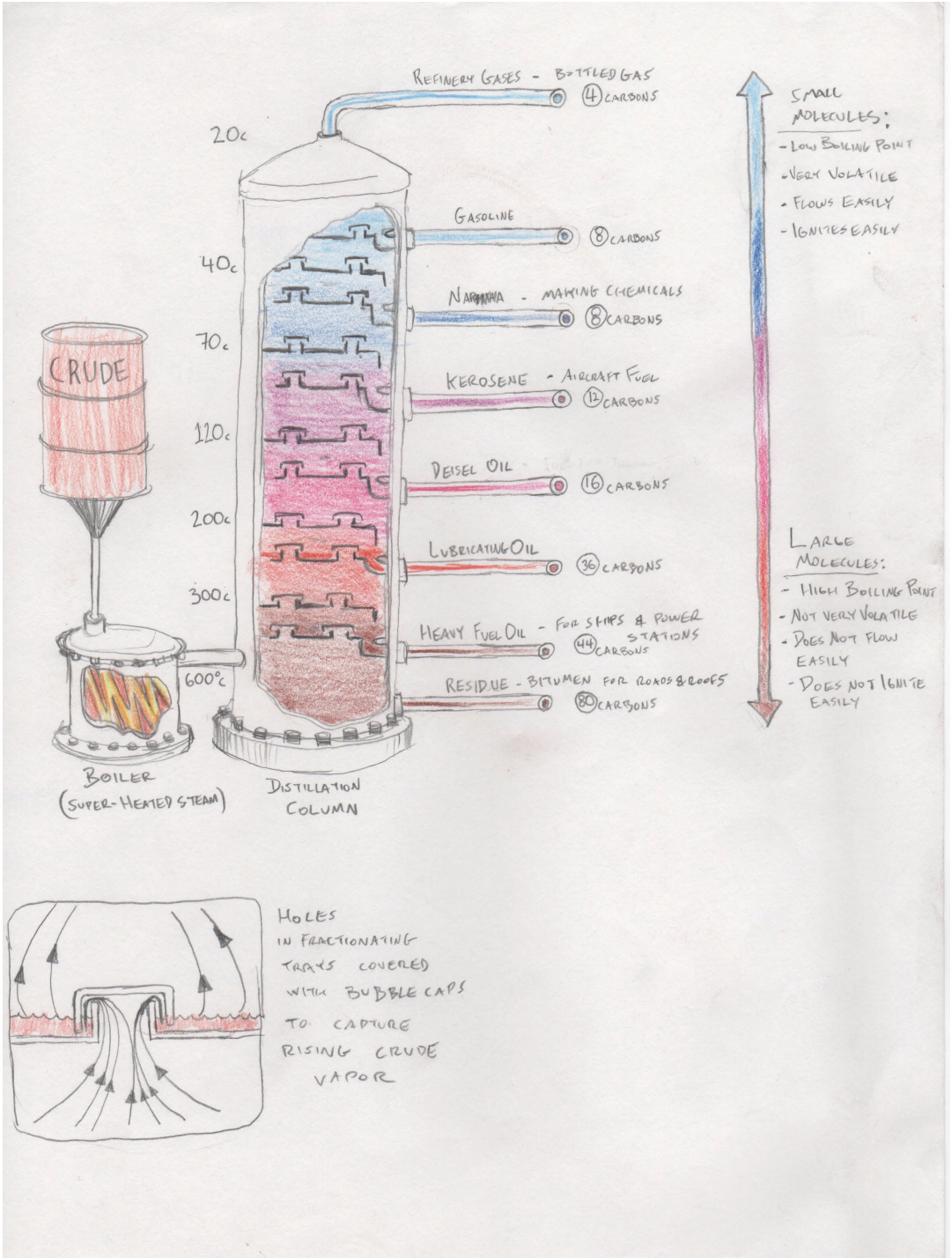
(swallowing)



(carrot growth)

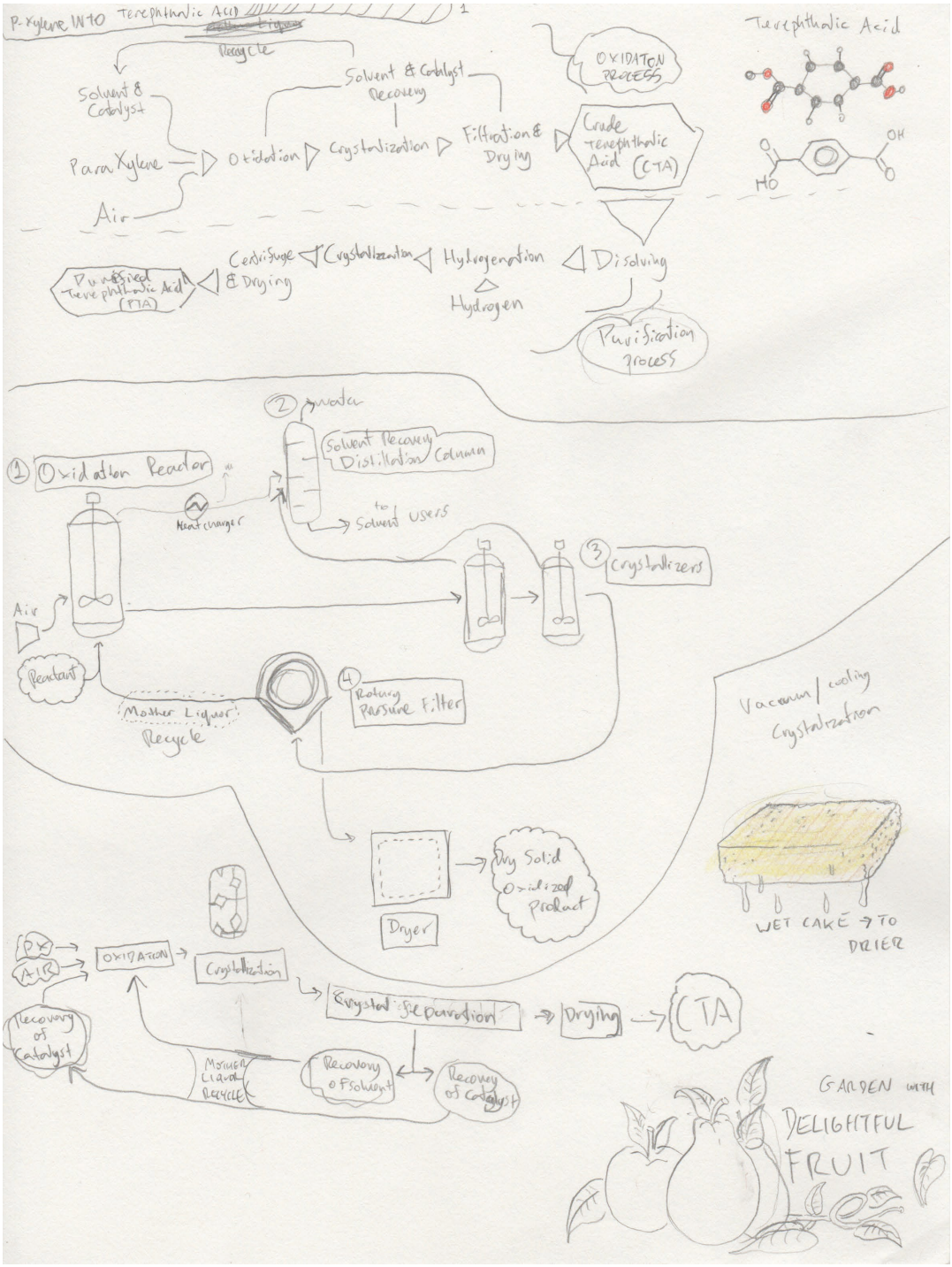


(packaging machines)

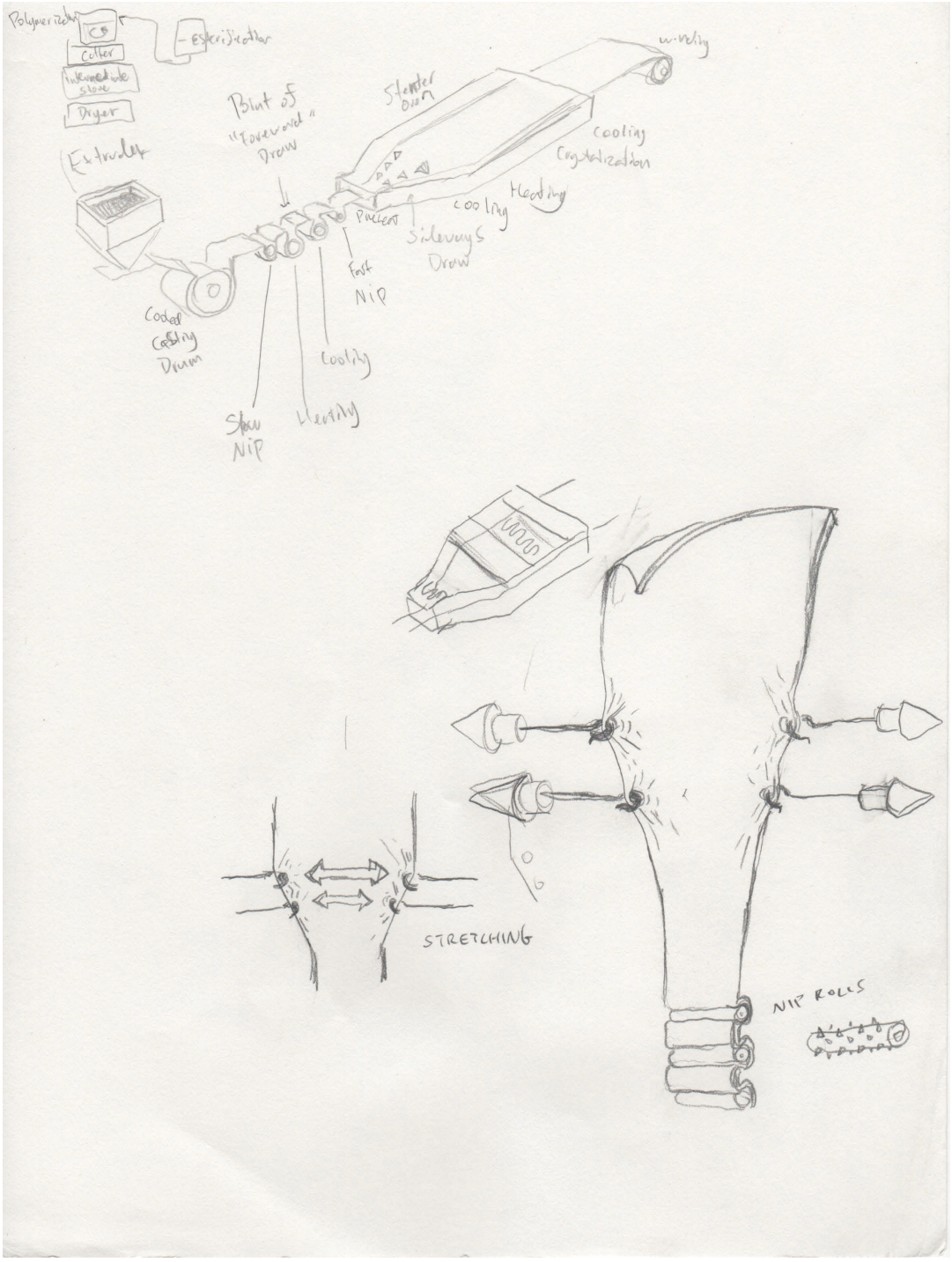


HOLES IN FRACTIONATING TRAYS COVERED WITH BUBBLE CAPS TO CAPTURE RISING CRUDE VAPOR

(distillation column)

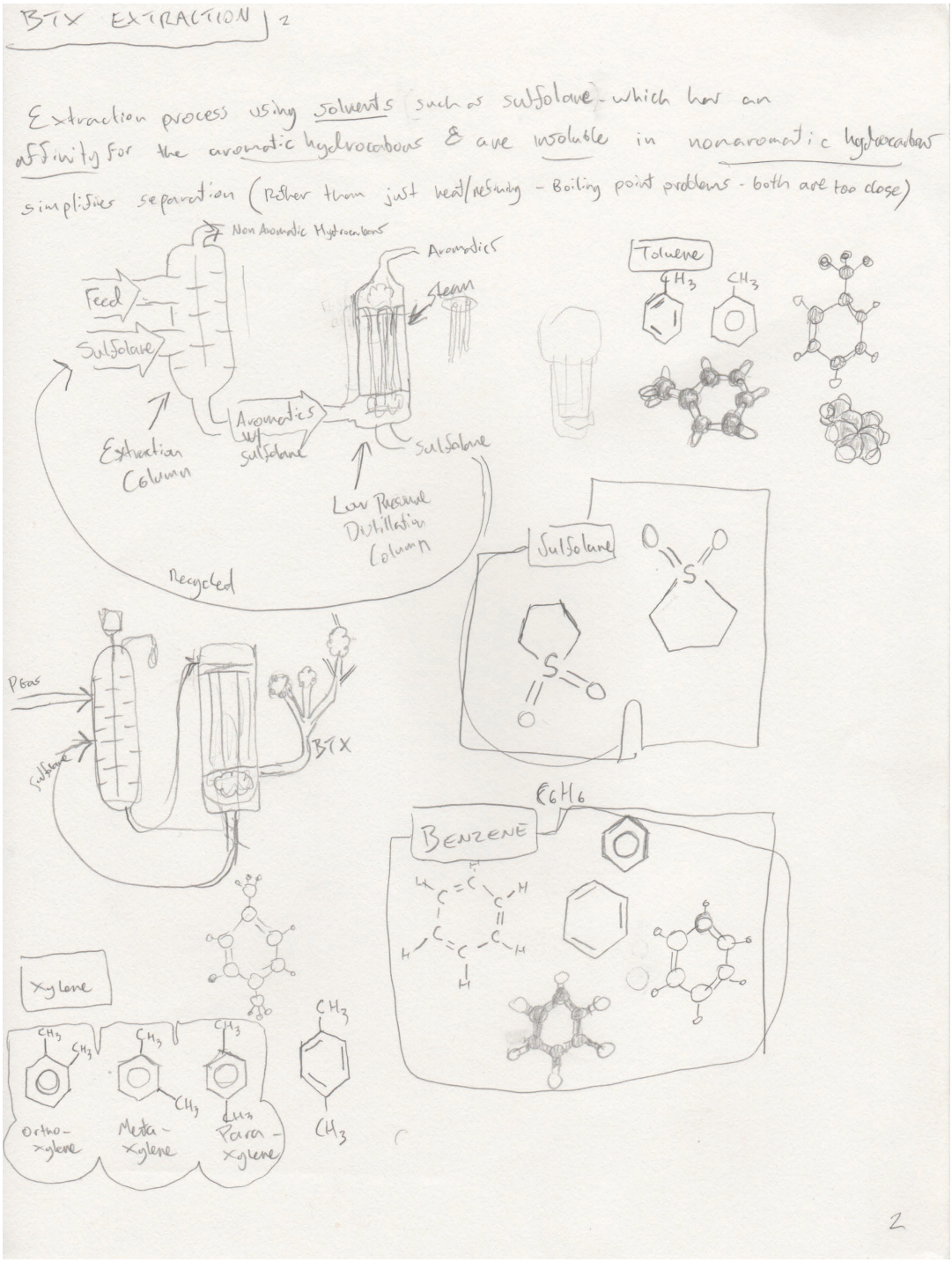


(p-xylene to terephthalic acid)

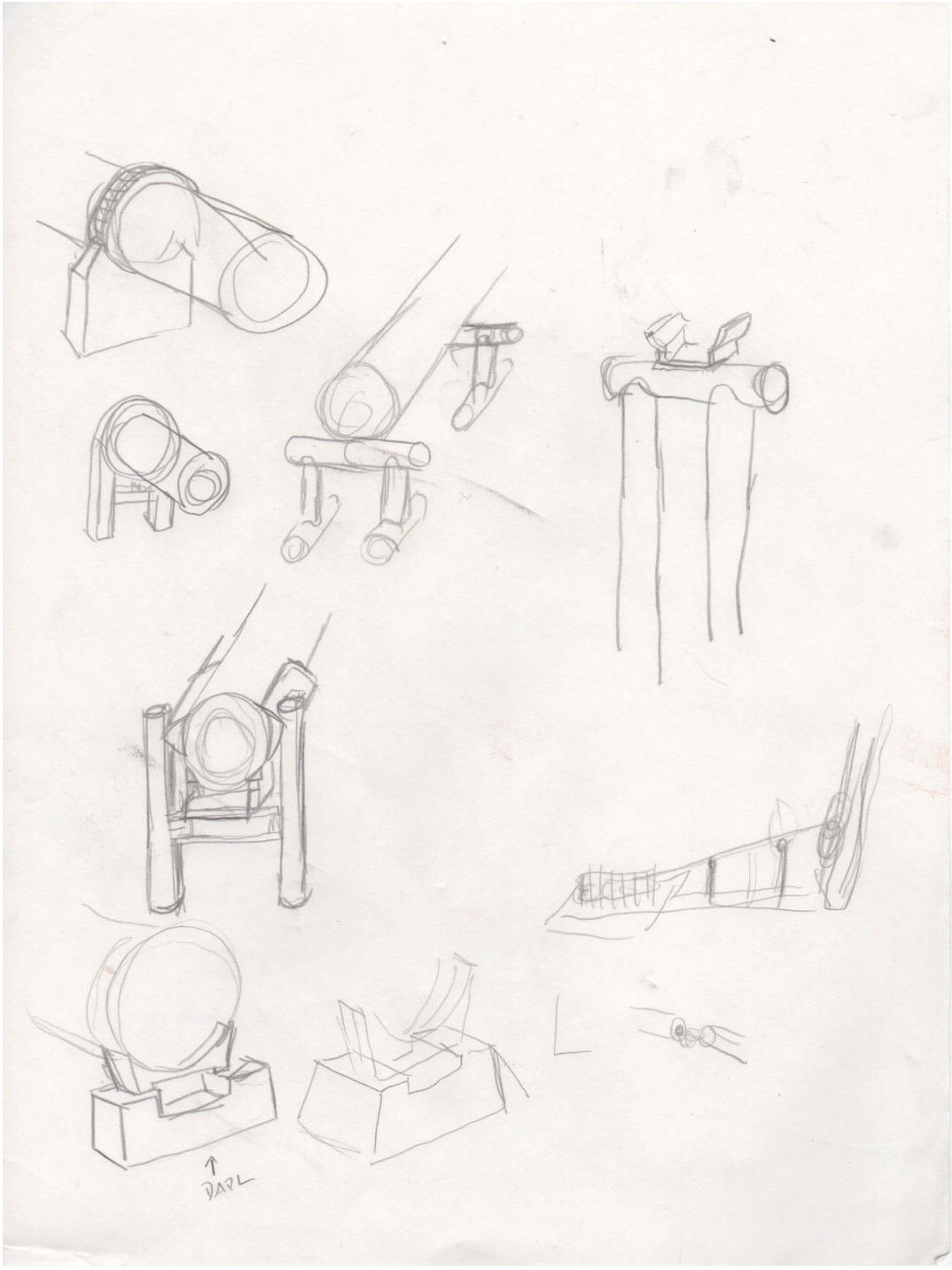


(sideways draw)

(naphtha cracking)



(btx extraction)



(pipeline supports)

DUPONT 14405

Recipe: Pellets of PET heated into Molten Mass

PET

made from

ETHYLENE GLYCOL

&

DIMETHYL TEREPHTHALATE → BY TRANSESTERIFICATION REACTION

OR

TEREPHTHALIC ACID → BY ESTERIFICATION REACTION

- when Raw Materials are Combined under high Temperatures & low vacuum pressure, long chains (polymer) form, Mixture Thickens as chains grow Longer - Once appropriate chain length is reached, reaction is Stopped.

- "RESULTING SPAGHETTI-LIKE STRANDS ARE THEN EXTRUDED, QUICKLY COOLED, & CUT INTO SMALL PELLETS."

- Pellets reheated till molten liquid:

  ▷ Stretched in 1 direction for Fibers

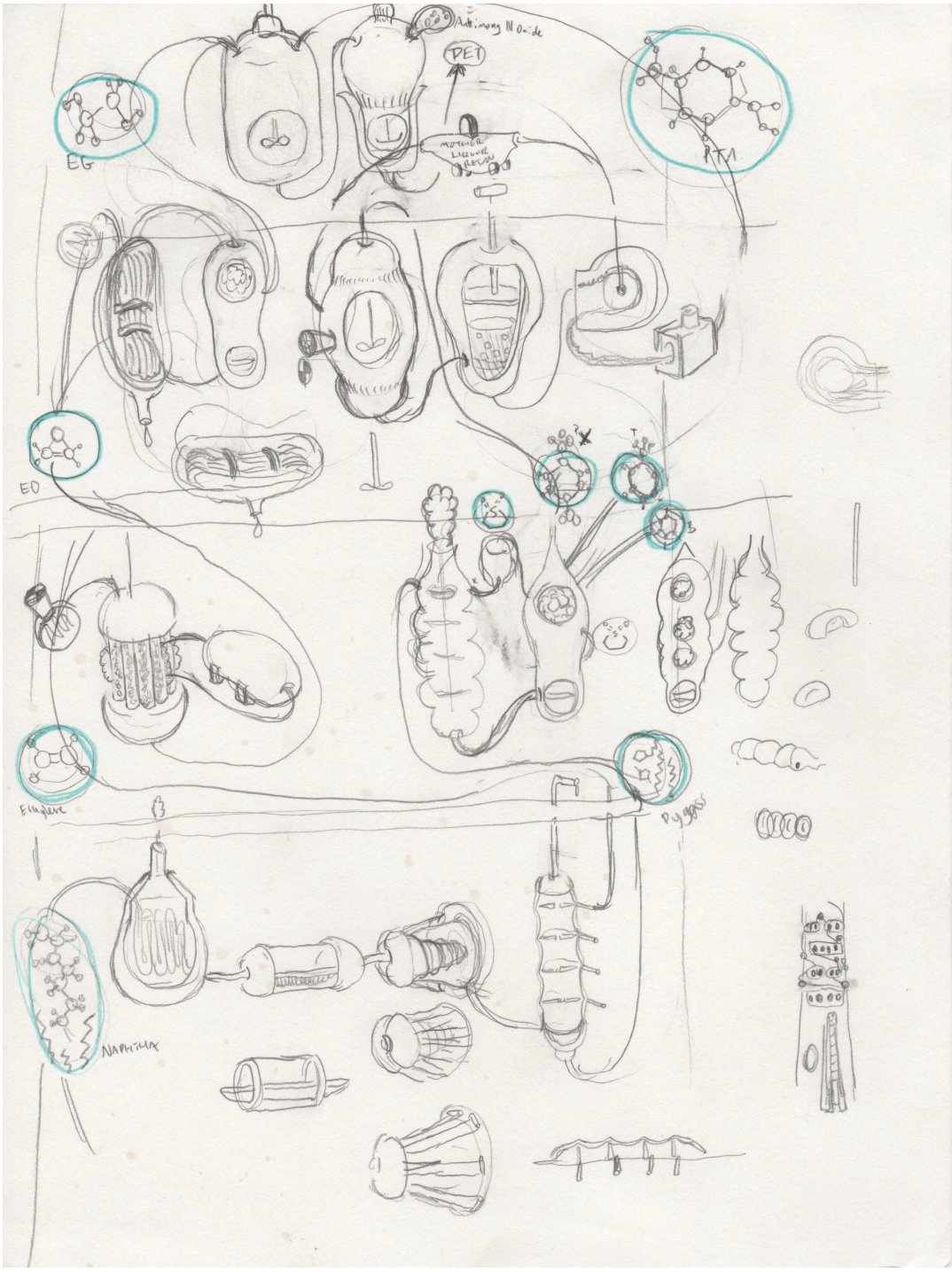
  ▷ 2 directions for Films

COOLED QUICKLY WHILE STRETCHED, FROZEN WITH CHAINS INTACT

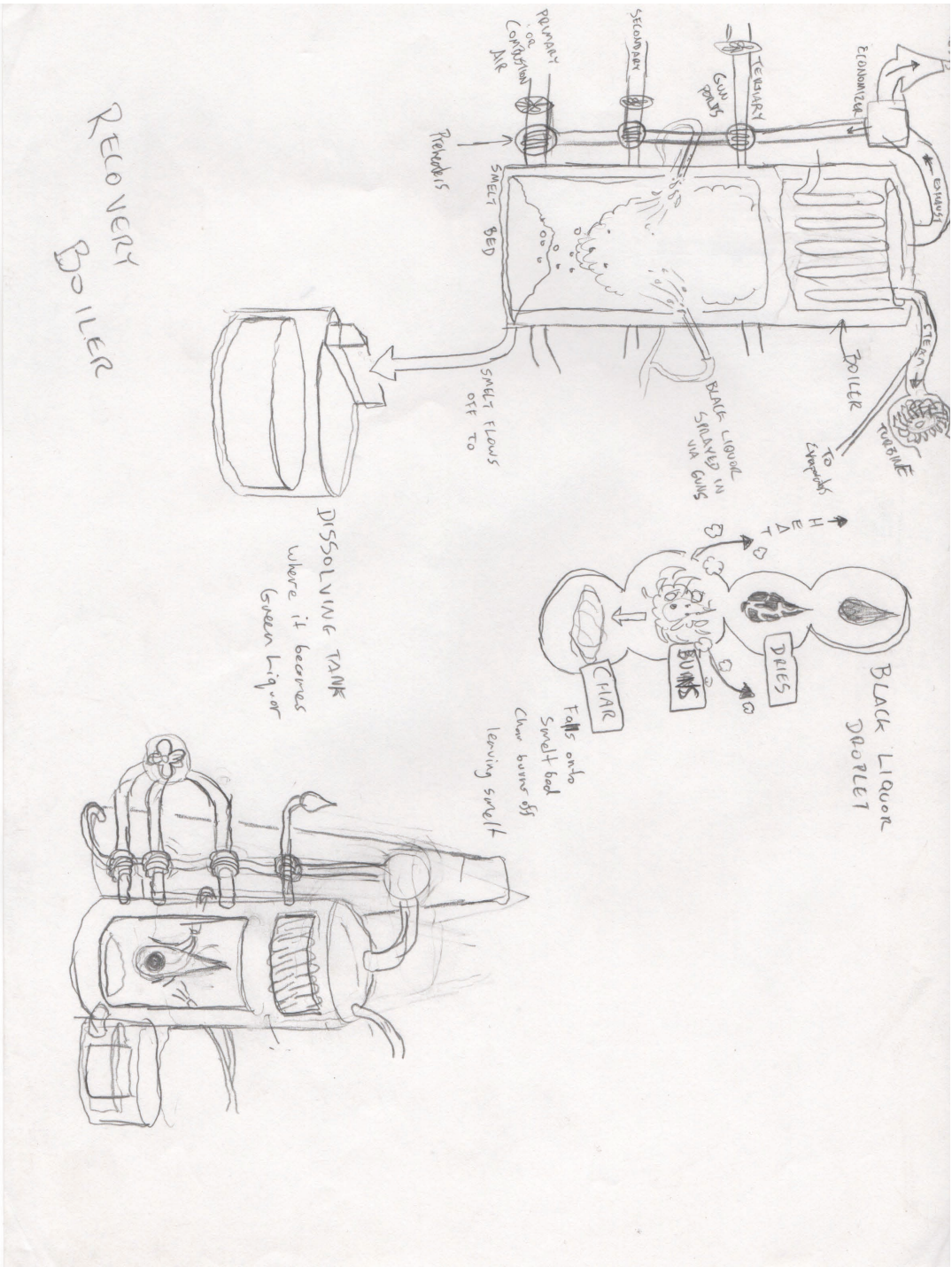
(If PET is held stretched at high temps, it's slowly crystalizes, becomes opaque, more rigid.

PET FILM: USED FOR VIDEO/PHOTO/X-RAY TOO

(polyethylene terephthalate)



(process fruits)



(recovery boiler)