白水里长出我的第一颗晶体

10月18日，星期六，晴。今天上午，我在厨房的窗台上做成了一个明矾结晶实验。说是做成，其实中间失败了一整回。

起因是周五晚上，我在网上看到有人把一杯清水养出了透明的晶体。我来了兴致，翻出去年科学节剩下的半袋明矾，决定自己试试。我先查了做法：热水溶解明矾，配成浓溶液，放一夜等它结晶。步骤看起来简单，我照着烧了半杯开水，加明矾，加到搅拌不动为止，然后把杯子坐在桌上，等奇迹发生。

下午两点，我跑去看：杯底干干净净，只有几粒细得看不清的白渣。我按网上说的又添了一勺明矾，挪到阳台，心里还替自己找好了说法，也许它长得慢。第二天早上再看，杯底还是那层白渣，连一颗像样的晶体都没有。我在日记本上写下：第一次，失败。

我不甘心，晚上又去查资料，这回查得细。原来问题出在两个地方：降温太快，杯子太满太晃，溶液里没有晶种，析出来的东西就没有地方落脚。我把要点记在纸条上：饱和、静置、慢凉、要有种子。

周日下午我重做。重新配了饱和溶液，这次不图快，让它在桌上自己凉到室温，再从第一次的白渣里挑出最大的一粒当种子，用头发丝拴住，吊在杯子正中。杯子外裹了一圈毛巾，塞在桌子底下不被人碰的位置。我给它定了闹钟，十二小时不许偷看。

周一下午去看，那颗种子真的长大了，黄豆大小，棱角清清楚楚，对着光能看见里面一层一层的影子。我举着杯子转了三圈，比上周任何一次都开心。

这个周末我哪儿也没去。可我想，第一次那杯失败的水并没有白倒，它把种子留给了我。成功不是把方法换掉，而是把方法里差的那几个细节找回来。

My First Crystal Grown in a Cup of Water

October 18, Saturday, sunny. This morning I grew my first alum crystal on the kitchen windowsill. Grew is a generous word, because it failed once before it worked.

It started on Friday night, when I watched someone online keep a cup of clear water until it sprouted a transparent crystal. I dug out the half bag of alum left from last year's science festival and decided to try. I looked up the method: dissolve alum in hot water into a strong solution, wait overnight for crystals. It looked simple. I boiled half a kettle, added alum until it refused to stir in any more, sat the cup on the table, and waited for magic.

At two in the afternoon I checked: the bottom of the cup was clean except a few specks of white dust. I added another spoon of alum as the video suggested, moved the cup to the balcony, and made excuses for myself, maybe it grows slowly. Next morning,

still only white dust, not one decent crystal. I wrote in my diary: attempt one, failed.

Unconvinced, I went back to research that night, and read carefully this time. The problems were cooling too fast, a full and wobbly cup, and no seed crystal for the dissolved alum to settle onto. I wrote the key points on a slip of paper: saturated, still, slow cooling, and a seed.

On Sunday afternoon I started over. I mixed a fresh saturated solution, let it cool to room temperature by itself, fished out the largest grain of white dust from the first cup as a seed, tied it to a strand of my own hair, and hung it in the middle of the cup. I wrapped the cup in a towel and tucked it under the table where nobody would bump it, then set an alarm: no peeking for twelve hours.

When I looked on Monday afternoon, the seed had grown to the size of a soybean, its edges sharp and clear, with layers visible inside when held to the light. I turned the cup around three times, happier than all of last week put together.

I went nowhere this weekend. But I think the failed cup was not wasted, because it left me the seed. Success is not about swapping the method for a new one; it is about finding the few details the first method was missing.

第八滴到第十滴之间

10月25日，星期六。今天我做了一件小事：用柠檬汁把豆浆点成了豆腐脑。为了这件小事，我前后折腾了三个钟头，中间有一次真的想收摊。

早上我在书里看到一句话，酸能让豆浆里的蛋白质抱成团。我就想，家里的醋太抢味，柠檬清一些，能不能点出嫩豆腐脑？我把问题写在日记本第一页，先榨了小半碗柠檬汁，又热了一杯豆浆，然后一滴一滴地点。点到第八滴，豆浆纹丝不动；点到第十二滴，还是清的。我以为豆浆放凉了，倒回锅里热开，重新点，加了半碗柠檬汁，豆浆依旧是一杯豆浆。

第二次失败。我把勺子放进水池，心里打鼓，要不就这样，反正也没人要求我非做成。但我又想起一句话，实验哪有一次成的。再说，问题还挂在我的日记本第一页上，没解决，我不甘心。我把杯子端回桌上，决定再查一遍资料。这回我查到了关键：温度要八十度上下，太滚不行，太凉不行；点下去要静置，不能一直搅。我这才明白，前两次我又是煮沸又是搅拌，忙得越欢，离成越远。

我重新做。新豆浆热到锅边冒小泡就关火，晾两分钟，滴进十滴柠檬汁，用勺背轻轻推了一下，就不管它了。盖上盖子，坐在灶台边等。十五分钟，我看了三次表，忍住没揭盖。

揭开盖子的那一刻，豆浆表面结了一层嫩嫩的凝花，像街上卖的豆花。我舀了一勺，颤巍巍

的，加了一点糖。味道其实一般，还有点酸。可我站在灶台边笑了好一会儿。妈妈从房间出来，问我笑什么。我说，我点出来了。

晚上我在日记本上给今天起了个标题：第八滴到第十滴之间。失败不是方法错了，是方法里的细节我还没找全。第二次失败之后多查的那一遍资料，比那杯成功的豆花值钱。

Between the Eighth Drop and the Tenth

October 25, Saturday. Today I did a small thing: I turned soy milk into tofu pudding with lemon juice. The small thing took three hours in total, and at one point I genuinely wanted to quit.

In the morning I read a line in a book: acid makes the protein in soy milk clump together. Vinegar at home is too sharp, I thought, lemon is cleaner. Could it curd tofu pudding? I wrote the question on the first page of my diary, squeezed half a bowl of lemon juice, heated a cup of soy milk, and started dropping. By the eighth drop, nothing; by the twelfth, still clear liquid. Thinking it had cooled, I poured it back into the pot, boiled it, and started again with another half bowl of juice. It stayed soy milk.

Attempt two, failed. I dropped the spoon in the sink and wavered, maybe just stop, nobody required this of me. Then I remembered: no experiment works on the first try. Besides, the question was still sitting on the first page of my diary, unanswered, and I was not ready to leave it. I carried the cup back to the table and decided to read the references one more time. This time I found the key: the temperature should be around eighty degrees, too boiling or too cool both fail; after adding the acid, let it rest, stop stirring. Only then did I see that in my first two tries, boiling and stirring as hard as I could, the busier I was, the further away success got.

I started fresh. I heated new soy milk until tiny bubbles edged the pot, turned off the flame, waited two minutes, dropped in ten drops of lemon juice, gave it one gentle push with the back of the spoon, and left it alone. Lid on. I sat by the stove and checked my watch three times without lifting the lid.

Fifteen minutes later, the surface had set into a tender layer of curds, like the tofu pudding sold on the street. I scooped a spoonful, trembling, and added a little sugar. It tasted only average, a bit sour. But I stood by the stove grinning for a long while. My mother came out and asked what I was laughing at. I said, I curdled it.

At night I gave the day a title in my diary: between the eighth drop and the

tenth. Failure did not mean the method was wrong; it meant I had not found all its details yet. The extra round of reading after the second failure was worth more than the cup of pudding.

刷烂的三片叶子也算数

10月26日，星期日，晴。周日下午，我把一片桂花叶举到窗前对着光。叶肉透明得只剩叶脉，细细的，像一匹纱，光能从里面穿过来。我把它夹进语文书，这是我这周做成的一样东西。

可是三天前，这片叶子还长在小区那棵桂花树上，而我对做叶脉书签一无所知。周五晚上我查了资料，说书签是把叶肉煮烂刷掉，只留叶脉，要用碱水。我记下方子：食用碱、水煮、牙刷。

周六早上我第一次做。锅里接了水，挖了一勺食用碱，丢进几片老桂花叶，煮了二十分钟。捞出来，叶肉还牢牢粘着。我把叶子摊在桌上，拿旧牙刷一刷，叶子当场烂成一团绿泥。第一次，失败。

我不死心，晚上又去查。有人说碱要足量，有人说要煮到叶子发黑、一捏就软，刷的时候要顺着叶脉，从叶尖往叶柄的方向，力道要轻，刷子要旧的、毛软的。我把这些记在纸条上，和第一次的做法一条条对照，发现自己每一步都差了一点：碱放少了，时间煮短了，刷子还是把硬毛的新牙刷。

周日上午我调整重来。碱加到三倍，水换干净的，这次煮到叶子发黑、用镊子一捏就软才停火。我把叶子摊在玻璃板上，蘸着水，用旧牙刷从叶尖起第一下。第一片刷破了，第二片刷到一半也破了。第三片我屏住气，刷子几乎不使劲，叶肉一层一层退下去，叶脉像一张渔网，慢慢露出来。

我把它吸干、压平，在叶柄上穿了根红线，又用旧报纸压了一晚上。现在它夹在语文书第十四课的位置，等期末复习的时候我再把它抽出来。

我在日记里写：那三片刷烂的叶子也算数。成功是从它们身上一点一点省出来的。

The Three Leaves I Ruined Still Count

October 26, Sunday, sunny. This afternoon I held an osmanthus leaf up to the window, against the light. The leaf flesh was gone, transparent down to the veins, fine as gauze, with light passing through them. I tucked it into my Chinese textbook. It is one of the things I finished this week.

Three days ago this leaf was still on the osmanthus tree in our neighborhood, and I knew nothing about leaf-vein bookmarks. On Friday night I looked it up: you boil

the leaf in alkaline water until the flesh softens, brush the flesh away, and keep the veins. I wrote down the recipe: baking soda, boiling water, a toothbrush.

On Saturday morning I made my first attempt. I filled the pot with water, scooped in a spoon of baking soda, dropped in a few old osmanthus leaves, and boiled them for twenty minutes. Out of the pot, the flesh still clung on. I spread a leaf on the table, touched it with an old toothbrush, and it collapsed into green mud. Attempt one, failed.

Not ready to give up, I went back to the references that night. Some said use enough alkali; some said boil until the leaf turns black and yields to a pinch; some said brush along the veins, from tip toward the stem, with almost no pressure, and use an old brush with soft bristles. I noted all of it on a slip of paper and compared it line by line with my first attempt. Every single step had been off: too little alkali, too short a boil, and my brush was a brand-new one with stiff bristles.

Sunday morning I adjusted and started over. I tripled the alkali, used clean water, and boiled until the leaves turned black and went soft under tweezers. I laid one on a glass board, dipped the brush in water, and made the first stroke at the tip. The first leaf tore. The second tore halfway. On the third I held my breath, the brush barely pressing, and the flesh peeled away layer by layer until the veins emerged like a fishing net.

I blotted it dry, pressed it flat, tied a red thread to the stem, and left it under old newspaper overnight. It now sits at Lesson Fourteen of my Chinese textbook, and I will pull it out again when final review comes.

I wrote in my diary: the three leaves I ruined still count. The success was saved out of them, little by little.

www.vv99.net