



吉娃斯愛科學繪本

邵族語

第6集
看不見的牽絆

翻譯

Diklha Tanakyuwan (丹俊傑)

配音

Tumi Tanakyuwan (丹菁)

吉娃斯愛科學

邵族語版

第六集 看不見的牽絆



族語全文朗讀



英語全文朗讀



華語全文朗讀





antu shmaqtu a shulshulin



So Small You Can't See



看不見的牽絆





Tumi masa Diklha taniza tata
maqusuqusum a langqisusay a atu.



Giwas and Behuy found a little black
puppy.



Tumi 和 Diklha 撿到一隻小黑狗。





Diklha pakaan maqusuqusum langqisusay
a atu, zain maqusuqusum a atu “Thumay”,
thumay isa Thau a lalawa inzai
maqusuqusum a thumay.



Behuy fed the dog and named it Nalu. In
the Atayal language, Nalu means “black
bear”.



Diklha 餵小黑狗吃東西，叫小黑狗
「Thumay」。「Thumay」在邵族語是「熊」
的意思。





Tumi kmathu Thumay mutaun, Thumay qirqiraniza ina tunuun a maqusum.



Giwas brought Nalu home. Nalu chewed some cloth that Mother had woven.



Tumi 帶 Thumay 回家。Thumay 咬壞了媽媽織的布。





ina imabuqnuriza. Tumi muqay lhmufu
Thumay manash'kaz.



Mother got angry, so Giwas had to grab
Nalu and run away.



媽媽生氣了。Tumi 只好抱著 Thumay
逃走。





latusha wa thau thmaduq Tuba pinutaun
sa Thumay, mamzai Tuba antu
mashashduu.



The two kids begged Bayan to adopt Nalu,
but he refused.



兩人拜託 Tuba 收養 Thumay，但是 Tuba
不答應。





Tumi masa Diklha mangqtu kmathu
Thumay utusi waqrath a shirshir milu.
kanuniza miazai matilawiza mat pidazah
kilhim faqlhu a talima.



Giwas and Behuy wanted to take Nalu to
the river for a bath. Maybe it would be
easier to find a new owner if he was clean.



Tumi 和 Diklha 想帶 Thumay 去河邊洗澡。
也許乾淨的樣子比較容易找到新主人。





“ata tu kmathu Thumay utusi waqrath a shirshir!” Tuba mathuaw makmamarismis inzai. shdadu thaithuy kinlhari a filhaq mushuqish kmaush tahamish a sazum.



“You can’t take Nalu to the riverside!” Bayan said nervously. He told them to get taro leaves to scoop water out of his water basin.



「不可以帶 Thumay 去河邊！」Tuba 很緊張地說。一定要他們摘山芋葉回來舀水甕的水。





Tumi kinmatilaw a filhaq, shdalishlumin.
maqaripupuz putu mat makapa. Diklha inara
madaradarak a filhaq. malishlum mat
maquliush a filhaq, numa putu mat maruruk.



Giwas picked some clean taro leaves, light
green, and round, with a shallow depression.
Behuy picked dirty leaves, dark green, and
longer with a deeper depression.



Tumi 摘了很乾淨的葉子。粉綠色、圓圓的，凹的
地方比較淺。Diklha 摘到髒髒的葉子。深綠色，
葉子比較長，凹的地方比較深。





Thumay ya riqazan a filhaq mika
maqirqri. Tuba muhiaw qaras thithu.



When Nalu saw the leaves, he tried to
chew on them too! Bayan stopped him
quickly.



Thumay 看到葉子就想咬。Tuba 急忙阻
止牠。





naur Diklha inara itia kumahin a
farazay a filhaq, ya kaanin akumahinin.



The leaves Behuy had gathered were
giant elephant's ear, which are
poisonous to eat.



原來 Diklha 拿的是有毒的姑婆芋葉，吃
了會中毒。





“muqay shaktun tata wa filhaq amiakuza
qa shunuru?” Tumi pakikalhiwan.



“How can you tell the difference by
looking at the leaves?” Giwas asked.



「只看到其中一種葉子時要怎麼分辨呢？」
Tumi 問。





“farazay a fiqlha wa fafaw a nai-mi a kupur patara sazum shansuunin minqarimusuz, isa filhaq a fafaw minkakarungkun.” Tuba mzai.



“The surface of the taro leaves have fine nanoscale cilia hairs that cause water droplets to collect and roll around.” Bayan said.



「山芋葉子上面的奈米級纖毛讓水聚集成水珠，在葉子上面滾來滾去。」Tuba 說。







latusha wa thau riqaziza mindaaq, niza tu
riqazan filhaq a fafaw ianan kupur,
tunkazash “nai-mi”, Diklha mathuaw
maqaran kazaiku itia maqitan a kakaanin.



The two kids looked closely, but couldn't
see the hairs. Behuy got excited when he
heard the word “nano” because he thought
it was a delicious food.



兩人看了半天，看不出葉子上有毛。聽到「奈
米」，Diklha 很開心，以為是好吃的食物。





Tuba mathathawan mzai: “nai-mi mathuaw madazumdum a inangqulishan a qbit, pasai matha niza tu shaktunin.”



Bayan laughed and said: “A nanometer is a very, very small measurement of length, you can’t see it with the naked eye.”



Tuba 笑著說：「奈米是很小很小的長度單位，用眼睛是看不出來的。」





nai-mi lakuza qa madadazumdum a inagqulishan?
Tuba mzai: “ya mara sa farazay a filhaq minkahiwan
shampanaq wa prug miazithu a mara’in, filhaq fafaw
a kupur amingqthawan miazai Thumay a buut
matmadazishdish mat’maluish a kupur tataal maquliush.”



How small is it really? Bayan said: “If the taro leaf
was as big as the ancient battlefield, the cilia hairs
would be the size of the smallest hairs on Nalu’s
body.”



奈米到底有多小？Tuba 說：「如果把山芋葉變成像古戰場那麼大，葉子上的纖毛就變成像 Thumay 身上最細最短的毛一樣長。」





minuiza qa madazishdish a kupur
shduu shansuunin minqarimusuz?



Why do the cilia hairs turn water
into droplets?



為什麼纖毛可以聚集水珠呢？





ya farazay a filhaq mingqthawan mara'in shaktunin,
amariqaz sa filhaq a fafaw miazai antu mabariz,
tatata wa tumbu a iutu, ifafaw ianan mapushaz
shaunatantu marimaz nai-mi izui madadazumdum
miazai qathna wa wa-si a aniamin.



If you magnify the taro leaves, you can see that
the surface is uneven. Each protruding structure
has needle-like waxy structures 20 to 50
nanometers in size.



如果把山芋葉變很大來看，會看到葉子表面其實是
凹凸凸凸的。每個凸出的地方，上面又有20個到
50個奈米那麼小又像針一樣的蠟質東西。





sazum “antu miku” masa filhaq ifafaw izui
wa-si aniamin ansuunin. mamzai maqa
“nai-mi” a numanuma, sazum kitataan
antu miku pataudaqin filhaq a ifafaw.



Water “doesn’t like” to touch those waxy
structures.



水「不喜歡」和葉面上那些蠟質東西在一起。
可是因為「奈米」的關係，水就更「不喜歡」
貼在葉面上。





Tumi mzai: “nai-mi muqay
madadazumdum qa?
itia lazithu ma’ania qa?”



Giwas said: “Isn’t nano really small?
How can it have such a big impact?”



Tumi 說：「奈米不是很小嗎？
有那麼厲害嗎？」





Tuba mzai: “filhaq a fafaw tatata wa tumbu a iutu a makafaw kakaririran nai-mi miazai qathna wa-si aniamin, patara sazum masa wa-si aniamin a malhituzin a iniutuan kitataan manasha.”



Bayan said: “All of the protruding areas on the surface are full of nanoscale waxy needle-like structures, increasing the contact area with water, so the water doesn’t like to touch the leaf 's surface.”



Tuba 說：「葉面上每個凸出的地方上面又長滿奈米級像針一樣的蠟質東西，讓水和蠟質東西的接觸面積又更多更多了。」





maqa antu miku masa filhaq a fafaw qalha wa nai-mi
qbit wa-si aniamin pataudaqin ansuunin, filhaq a fafaw
shansuunin mingqarimusuz, isa filhaq a fafaw
mingkakarungkun. sazum a qarimusuz shaunanai, filhaq
a fafaw mumburabura anthapuan, filhaq a
minmatilatilawiza.

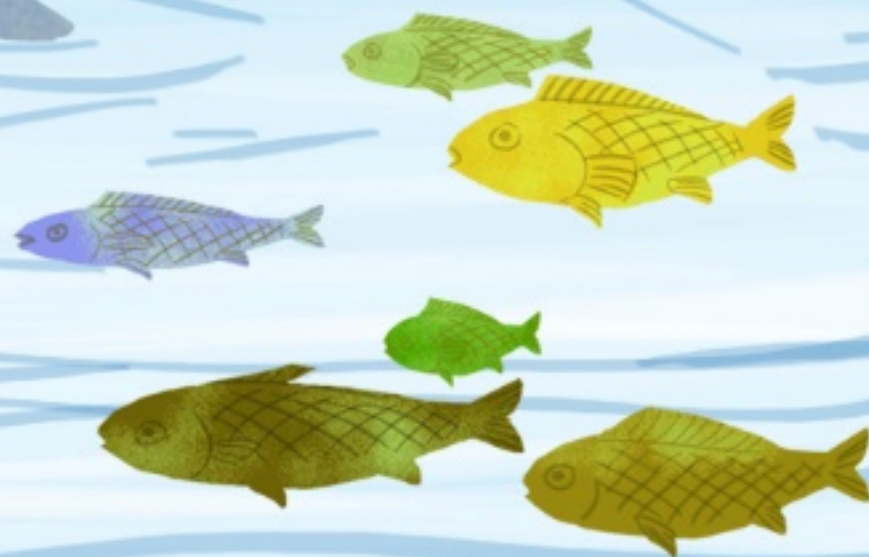


Because the water doesn't like to touch the waxy
structures, the water on the leaves collects into droplets
and rolls around on the surface. When the droplets roll
off the leaf, they bring dust and dirt with them, so the
leaf becomes clean.



因為不喜歡和葉面那麼多的奈米級蠟質東西貼在一起，葉
面上的水就聚集成水珠，在葉面上滾來滾去。水珠從葉面
滾下時，也順便把葉面的灰塵帶走，葉面變得很乾淨。







izai wa numanuma, ihalaiza isa baruku a filhaq
ungqtuan, numawan zain baruku filhaqa a
pulhaqtuan puqaqanqan. bunaz a rusaw a shapa
tataal mani, numawan bunaz a rusaw maqa
miazithu shduu muhiaw mrauz!



This phenomenon was first discovered on lotus
leaves, so it is called the lotus effect. Shark skin
has the same effect, so sharks can swim really fast!



這種現象，最早是在蓮葉上發現的，所以又叫做
蓮葉效應。鯊魚皮也有同樣的效果，所以鯊魚才
可以游得很快！





naurzithuiza! pashtay maqaran usuun
mindahip Thumay milu.



So that's how it works! They all
happily gave Nalu a bath.



原來如此！大家開心地一起幫 Thumay
洗澡。





Thumay madadu Tuba, maklalilit
intahatahawan sa Tuba.



Nalu really liked Bayan and wouldn't
stop playing with him.



Thumay 很喜歡 Tuba，不停跟 Tuba
撒嬌。





Tuba mangqtuqtu thithu azazakuan hinadan
a Thumay matanthalhaq waqrath, patara
mingqaray thithu a shnaw antu makazaka.



Bayan became sad because he was
reminded of a dog named Nalu he had
as a kid who fell into the river.



Tuba 想起他小時候養的 Thumay 掉進河裡，
讓他難過很久。





Tumi mazai: “Ruthun ikahil thithu shiz
katshushuz, mathuaw iaku maqarman,
kanuniza iaku miarama lhungqizi sa Ruthun!”



Giwas said: “Nainai once got really sick and
I was sad too, but I took good care of him!”



Tumi 說：「Ruthun 之前病得很重，我也很
難過，但我很仔細的照顧 Ruthun 喔！」





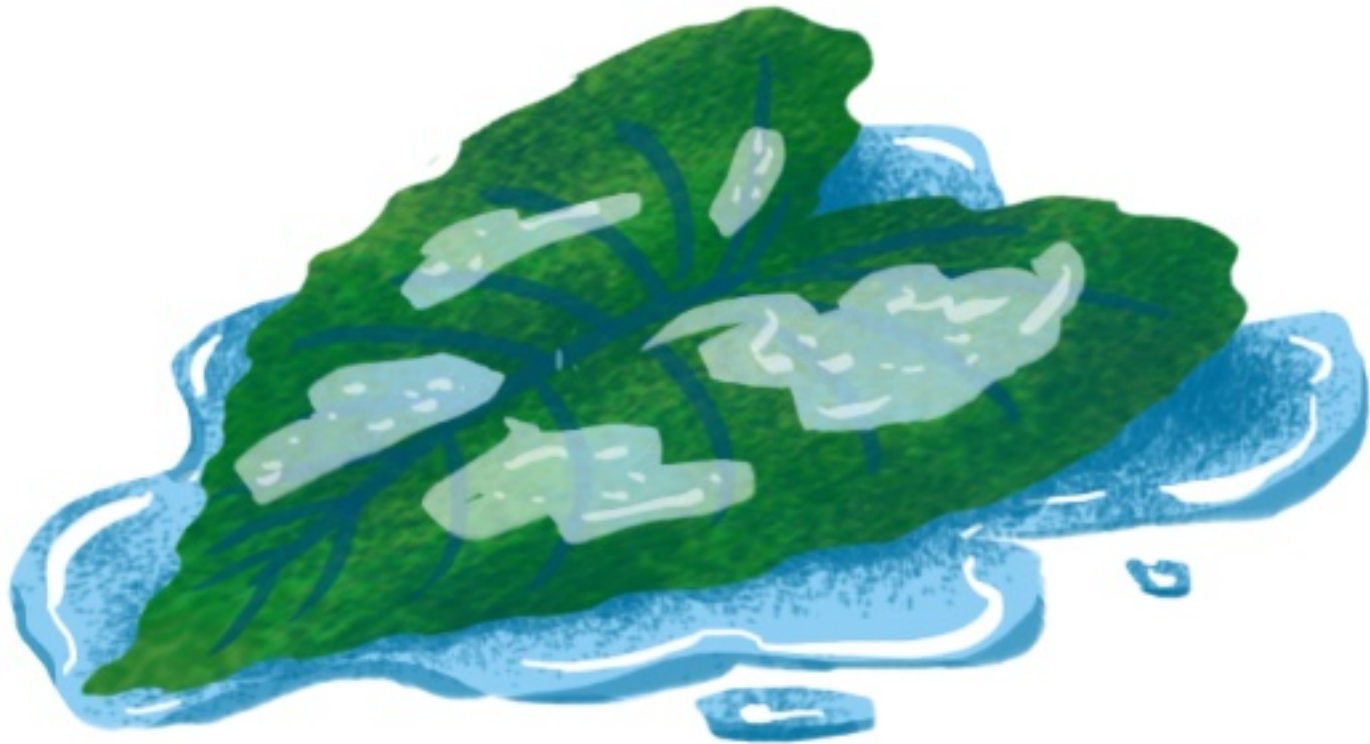
Tuba shirimun Ruthun kunqarman sa tiaz,
Tumi mulhumzaw mangqtu ishashanu
pasai "farazay a filhaq" uladin sazam lhai
Ruthun miqilha.



Bayan thought that maybe Nainai had been
poisoned, and Giwas remembered that she
had used “taro leaves” to bring him water
that morning.



Tuba 正懷疑 Ruthun 是吃壞肚子時，Tumi 突
然想起早上還用「山芋葉」裝水給 Ruthun 喝。





mamzai izai a “farazay a filhaq” miazai
antu shansuunin sa sazum a qarimusuz?



But that “taro leaf” didn’t form water
droplets.



但是那片「山芋葉」好像不會聚集水珠？





Ruthun mathuaw mabuqnur
minbabaramban man'alath'ath,
nauriza Ruthun kumahinin sa farazay!



Nainai got angry and cried out.
Apparently Nainai had been poisoned
from the elephant's ear!



Ruthun 很生氣，叫得更慘。
原來Ruthun 中了姑婆芋的毒！

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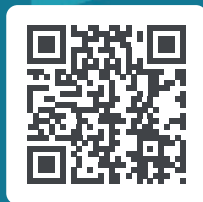
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