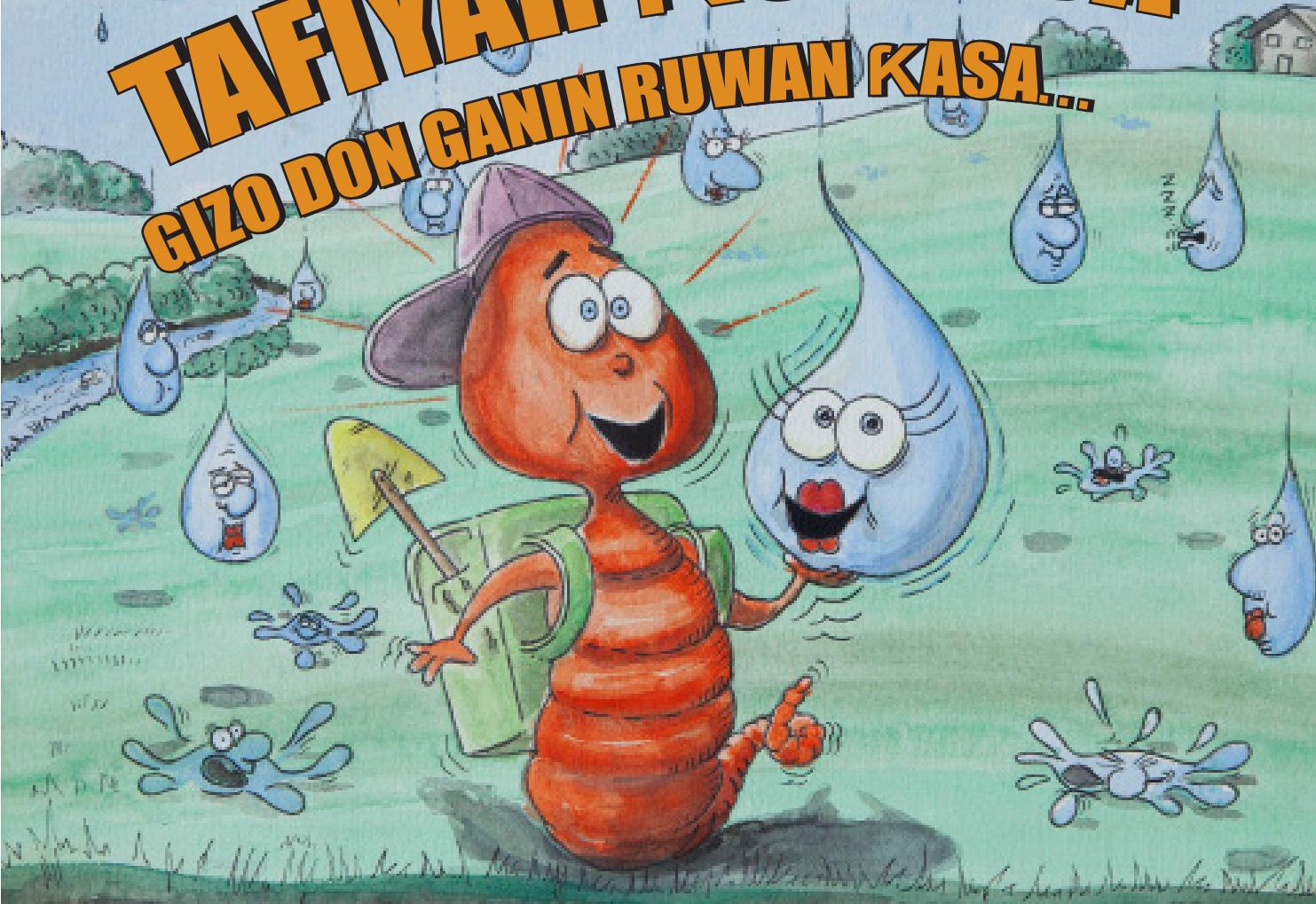


# TAFIYAR KOKI DA

## GIZO DON GANIN RUWAN KASA...

ZUWA SASHEN TARUWAR RUWANA KARKASHIN KASA

Masu kirkirar labari Leanne Appleby da Peter Russell  
Mai zane da tsara littafi Fortunato Restagno  
Mai fassara zuwa Aminu Ibrahim



© 1993 Leanne Appleby, Peter Russell (rubutu)

© 1993 Fortunato Restagno (zane)

d ab'i na farko, Nuwamba, 1993

d ab'i na biyu, Maris, 2017

Littafin dijital na 3, Yuli, 2020

Littafin dijital na 4, Disamba 2020

Littafin dijital na 5, Fabrairu 2021

Littafin dijital na 6, Satumba, 2021

Littafin dijital na 7, Satumba, 2021

Littafin dijital na 8, Satumba, 2021

Häkkin mallaka

Gidan Tarihin Kimiyar kasa

ISBN 978-1-7778409-0-7

Häkkin yadawa:

Gidan Tarihin Kimiyar kasa

University of Waterloo, Ontario, Canada N2C 3G1

Mai fassara zuwa Aminu Ibrahim

# **Tafiyar koki da gizo don ganin ruwan kasa... zuwa sashin taruwar ruwan a karkashin kasa**

Masu kirkirar labari Leanne Appleby da Peter Russell  
Mai zane da tsara littafi Fortunato Restagno  
Mai fassara zuwa Hausa Aminu Ibrahim

Godiya ga Deanna Arm-  
strong  
ta Youngstown, Alberta  
don taimakawa wurin ha-  
sashen yadda tana ke gane  
ruwan kasa.



Koki tsutsace irin tana data fito daga cikin kasa mai danshi goye da jakar kayan aiki a bayanta, tana cewa "kai yau fa rana ce ta musamman saboda wannan tafiya". Yayin da hadari yake haduwa, koki ta fara tunanin ruwa za'a yi nan da nan ta keta a guje cikin sarari.



Can saman koki, cikin hadari gizo watau dīgon ruwa da abokansa diggen ruwa Suna shirin sabuwar tafiya zuwa karkashin kasa.



Koki ta duba sama lokacin da gizo yake shirin sauка kasa. Sai ko ta kai hannu ta kama shi. Sauran diggen ruwan suka fantsama kasa suka nitse cikin kasa.



Kai ji abin mamaki gizo bai nutse kasa ba.



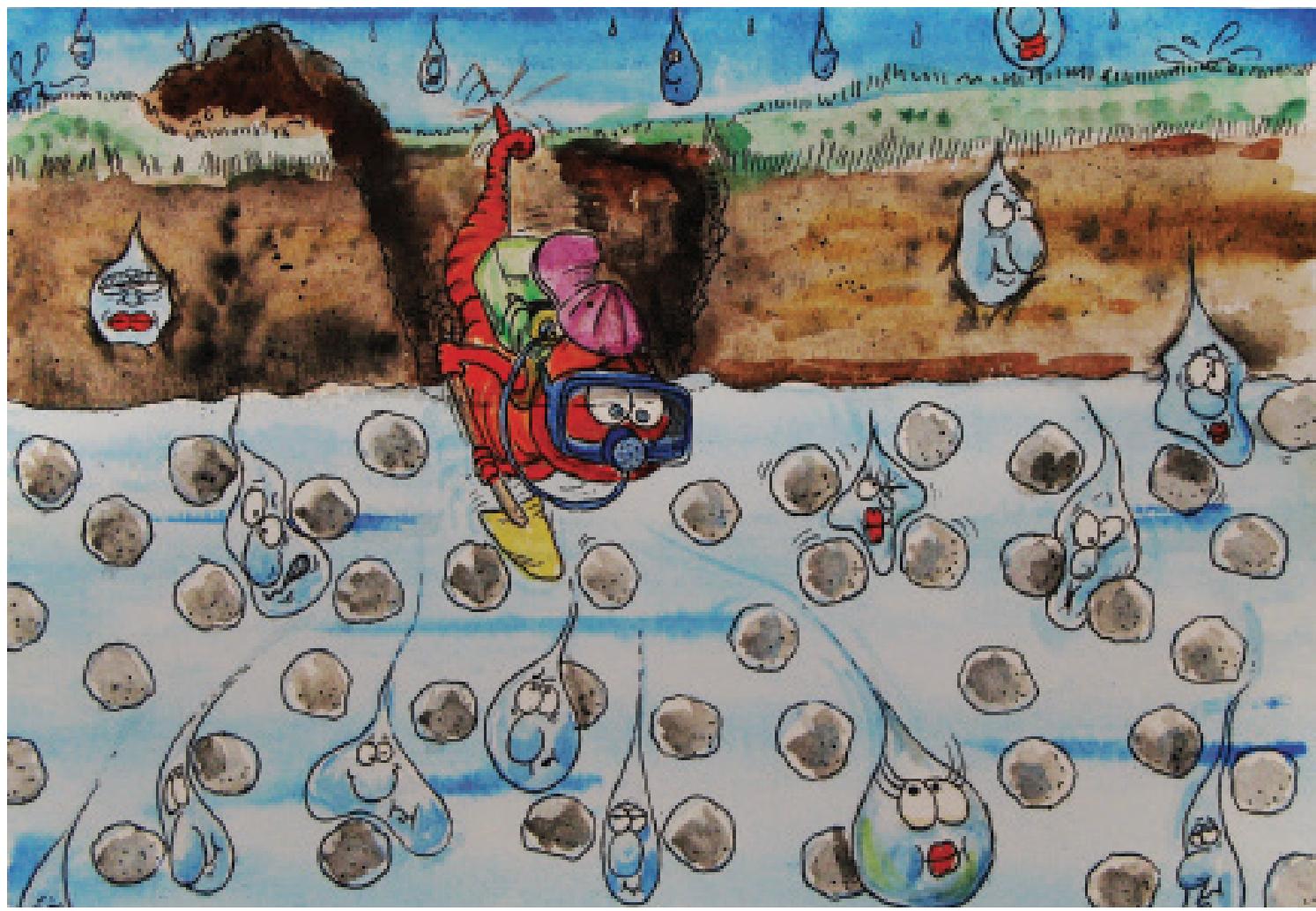
Digon ruwa gizo, yace nine gizo ya zama dole inbi abokaina in nutse kasa 'nutsewa' kuma? koki ta tambaya. gizo ya kwace daga hannun koki yaci gaba da bayani " idan dīgon ruwa ya sauка kasa, ya nutse cikin kasa shi ake kira tsotsewa" ko zaki biyon?



Ina zuwa gizo, koki ta fiddo da shebur daga jakar ta, cikin sauri ta fara tonon kasa daga busasshiya mai laushi da sau&k in tonawa zuwa mai karfi da wahalar tonawa. koki tace kai wannan aiki da wuya.



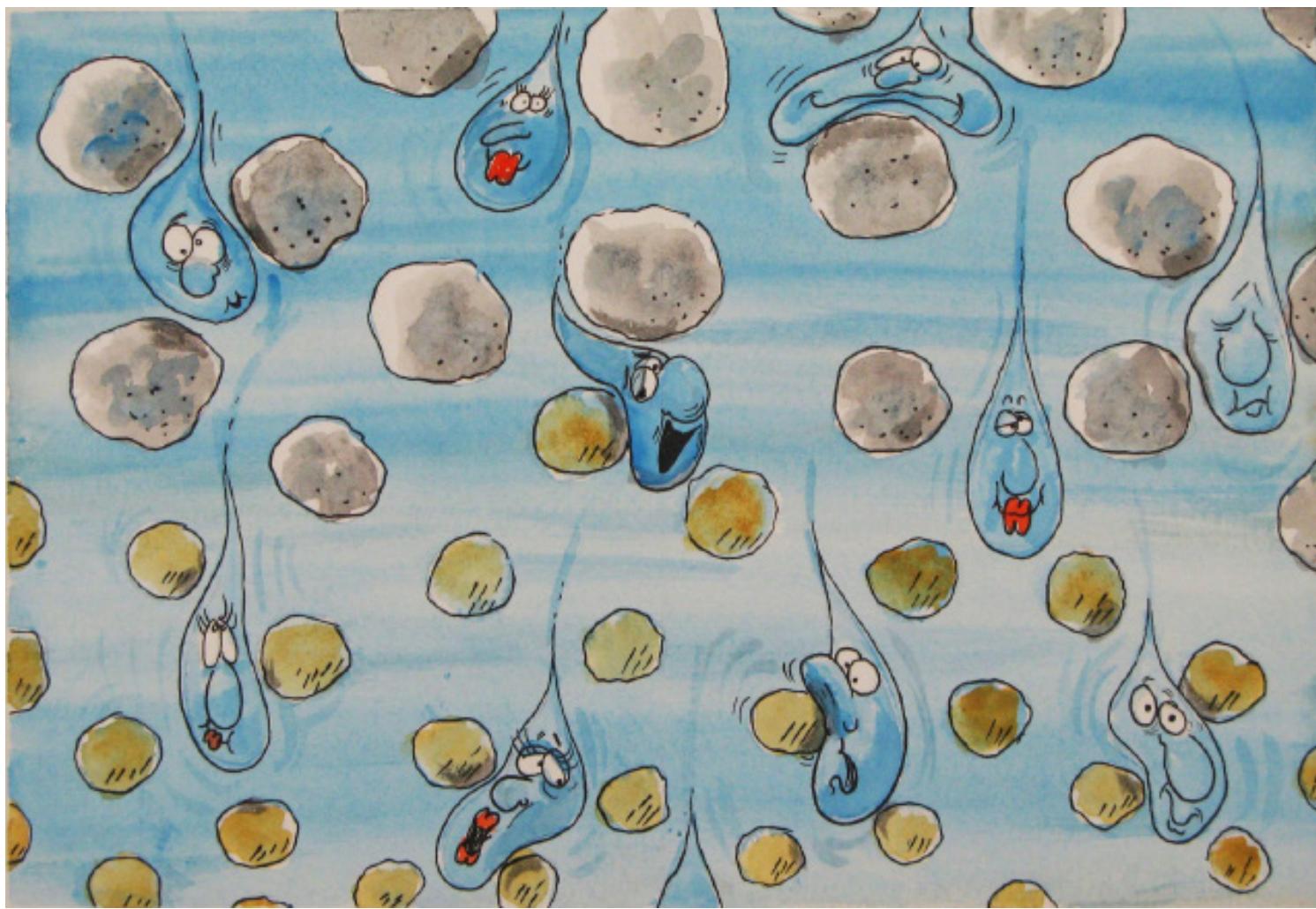
Ruwa ya fara cika ramin, sai koki tace ban taba zuwa matattarar ruwan kasa ba" nan da nan tasa takunkumin numfashi don ta shiga duk inda gizo ya shiga.



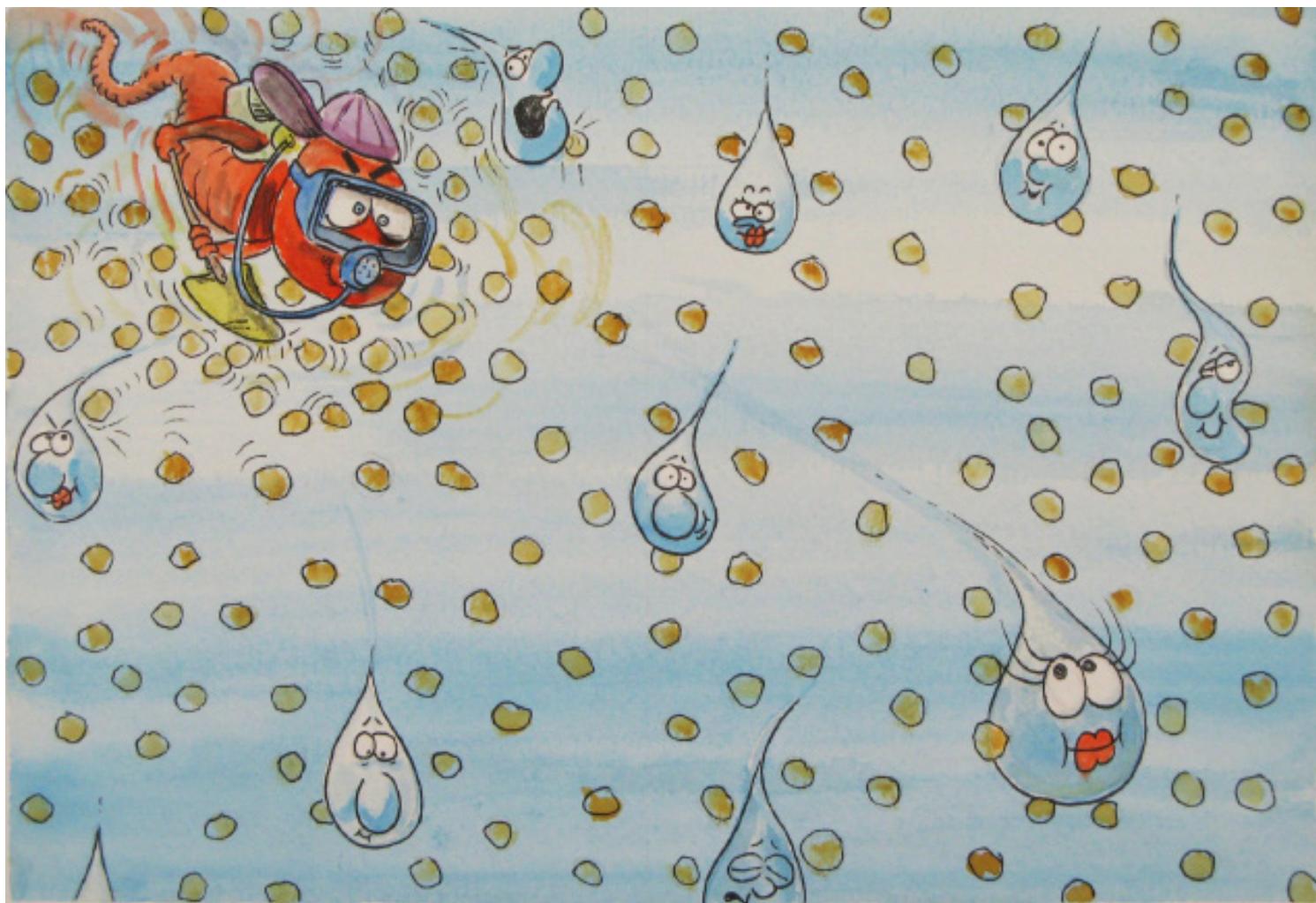
Lokacin da koki ke share wasu baraguzai, ta ke cewa "nan da saukin tonawa".



"Barka da zuwa matattarar ruwa ta karkashin kasa ke tana," inji gizo. Sunana koki, to koki "kinga nan wurin. Yanzu Muna cikin shimfidar duwatsu mai dauke da magudanan dake ruwa kewaye da ruwa.



Abokanan gizo suna ta wucewa ta tsakanin baraguzai, tsakuwa da lallausan yashi, suna kutsawa da dannawa zuwa magudanai can kasa.



Koki tayi ta tono da sauri sauri cikin lallausan yashi, ta na ta kokarin kasancewa da gizo duk inda ya shiga.



Koki da gizo sun isa shimfida mai rike ruwa, inda diggen ruwa suka kafe ba damar wucewa. Koki ta tambayi gizo, me suke yi anan? Gizo yace nan ne madakata, wasu diggen ruwa na ta kokarin kut-sawa amma suna dadewa sosai kafin su wuce.



Yayin da suka yi gaba, sai aka fara jansu zuwa wani bututu ta cikin kasa. " taimako" gizo yafara kururuwa, yana cewa mun shige cikin rijiya, koki ta tambaye shi, rijiya kuma?



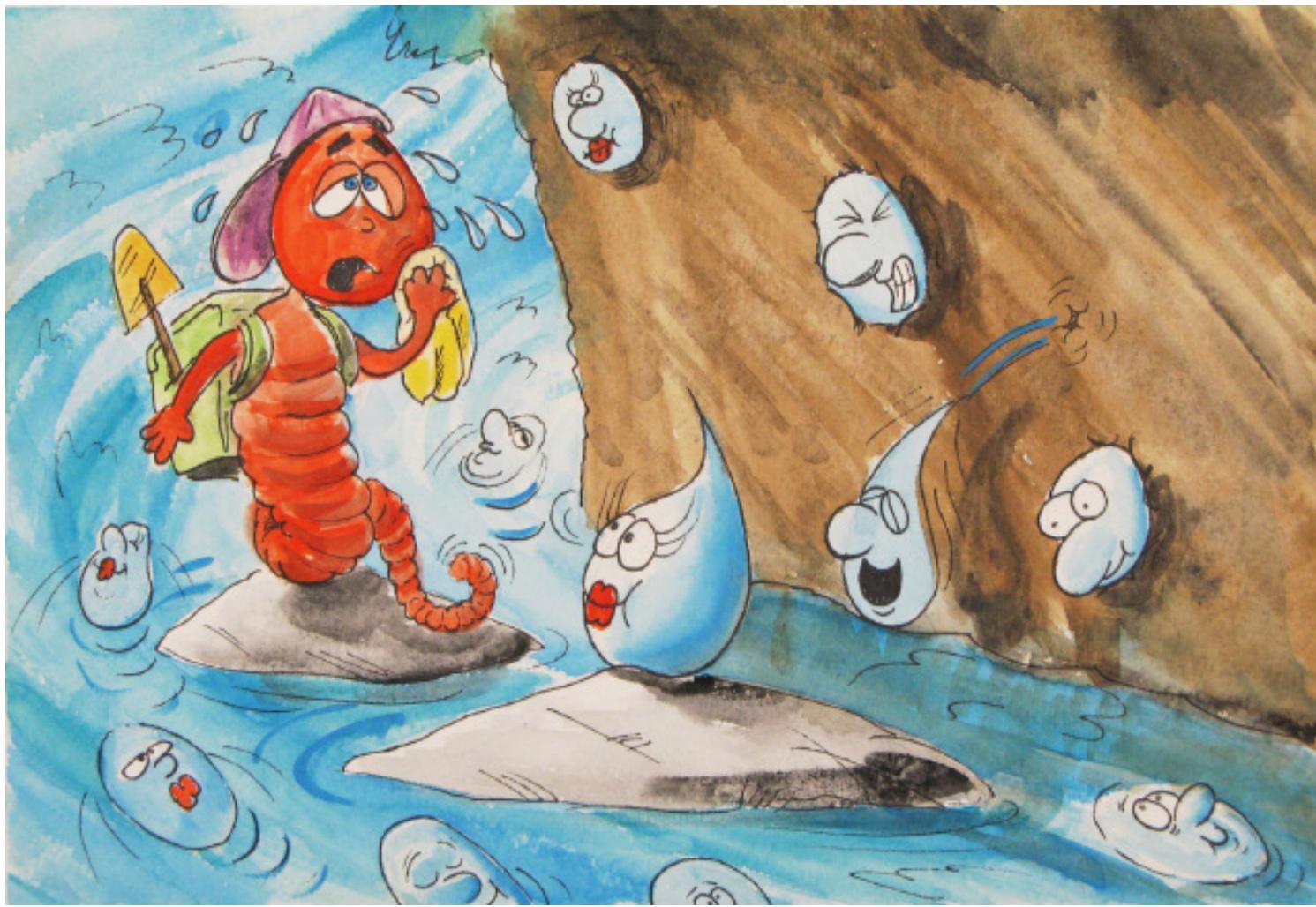
Gizo yace can a doran kasa ne wani ya sanya bututun karfe cikin kasa don jawo ruwa, shi wannan mutum sunan sa mista matin da yake cika bokiti da ruwa don shayar da aladunsa. Wasu daga cikin diggen ruwan kuma suna tserewa daga bokitin don koma wa matattarar karkashin kasa.



Cikin kulawa suka wuce bututun rijiyar, gizo yace " ji abokaina suna ta kutsawa daga magudanan ruwa zuwa tafkin diggen ruwa" sannan ya tambayi koki ko zata iya ninkaya, koki tace a'a, gizo yace to shikenan. Zo mu koma inda ba ruwa inda kawayenki ke rayuwa.



Koki ta cire takunkumin numfashi, tace, kai! iska mai dadi, Ruwan sama ya dauke.



Sun sauка kan duwatsu masu laima. Koki ta tambayi gizo "tsawon wane lokaci tafiyar nan ta dauke mu? Gizo yace " bawani lokacine mai tsayiba", "inda mun tafi dai dai da abokaina da ya daukemu satika zuwa shekaru kafin mu iso nan".



Gizo nan da nan ya fara daukar dumi, ya daina jin nauyin jikinsa ya fara kururuwa " wayyo ina zagwanyewa. Koki tace karka damu wannan shirin wata tafiyar ne ba da dadewa ba, sai mun hadu.



Gizo ya zagwanye kamar yadda ruwa yake zama tururi nan da nan yayi sama cikin girgije, koki tace “na gode” na gode da wannan gagarumar tafiya, ka dawo da wuri fa.



Bayan gizo ya gama zagwanyewa, koki tai ta tunanin yadda tafiyarsu ta kasance a zuciyarta. Yanzu ta san yadda ruwa yake zaga-wa tsakanin sama da kasa, kuma ta tabbata zata sake haduwa da gizo.

# Kundin ma'ana

## Gumi

Ruwan da tsirrai da dabbobi ke amfani dashi yana tashi ya bi iska a matsayin tururi. zaka iya ganin ruwan da kake fitarwa ta numfashinka a lokacin sanyi ko akan gilashi in kayi numfashi akai.

## Kewayen ruwa

Ruwa na kewayawa ne tsakanin sararin sama zuwa karkashin kasa. Ruwa na zubowa kasa yayin ruwan sama ko narkewar kankara, sannan ya bi iska zuwa sama idan ruwan ya canja zuwa tururi daga kasa, da koguna, koramu, da tekuna da sauransu.

## Ma'ajiyar ruwa

Inda ruwa yake taruwa a karkashin kasa da za'a tarar in an tonarijiya. Duk idon ruwa suna saman ma'ajiyar ruwa.

## Madakata

Shimfid ar duwatsu, yashi mai laushi ko laka mai hana gudanar ruwa zuwa ga rijiyyoi. Ruwa yana wucewa kad an kad an a wannan sashe na marikar ruwa.

## Magudana

Sashin karkashin kasa mai duwatsu da kasa dake kunshe da ruwa isasshe zuwa rijiyyoi, ruwa mai gudana a kasa.

## **Matattara**

Sashin taruwar ruwa a karkashin idon ruwa inda duk wasu kafofi tsakanin dutse, bambori, baraguzai, da yashi ke cike da ruwa.

## **Rijiya**

Wannan shine ramin da ake tonawa ko hakawa don zuko ruwa daga magudana. Kamar wani bututune acikin kasa.

## **Sashen wucewa**

Bambori, kasa da laka ko duwatsu a karkashin kasa inda kafofi da sako ke cika da ruwa da iska don wucewar ruwa zuwa ma'ajiyah.

Ruwan dake wucewa kasa ta wannan sashe yana jawo ma'ajiyar ruwa ta kusanci doron kasa bayan ruwan sama ko narkewar kan kara, a lokacin rani ma'ajiyar ruwa na kara yin kasa.

## **Tsotsewa**

Wannan shine yadda ruwa ke nutsewa ta kafofin kasa, bambori da duwatsu.

## **Tururin ruwa**

Tururin ruwa ne ke bin iska zuwa sararin sama, ya narke ya zama hadari don cigaba da kewayen ruwa.

## **Zagwanyewa**

Chanjawar ruwa zuwa tururin iska yana farawa ne a doran kasa inda kasa ke bushewa bayan ruwan sama.

Wallafar Gidan tarihin kimiyan kasa, Jamiar Waterloo, Sashen binciken ruwan kasa na Waterloo, da kuma Kamfanin Edviro, Waterloo, Ontario, Canada. ©1993.

Masu kirkirar labari Leanne Appleby da Peter Russell, mai zane Fortunato Restagno, mai fassara zuwa Hausa Aminu Ibrahim.



TORUÑO RESTAÑO © Oct. 1992



<https://uwaterloo.ca/earth-sciences-museum/>

An buga a Canada

Daga Canada