

AquaWhat ?

Play



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Characters

AQUATIC – molecule of water, a young man

AQUACHANEL - molecule of water, a mature woman

AQUAFORTIS - molecule of water, an intellectual

AQUAPORIN – protein, a customs officer

THE THING – chymotrypsin, a protein which digests others proteins

Scene I

Molecule of water walking down a town gutter. Obviously sad and lonely, hands in pockets. The sky is dark, the air cold. It kicks a stray can aimlessly.

AQUATIC: Cigarette butts, old bits of plastic, chewing-gum... It's dirty.... And the stench.... Not one clean drop of water... And I've been walking for hours. Wasn't much point in leaving my place for this... *(Sighs heavily. And turns to talk to the audience)* Hey!?! Anyone out there? No? No one? And here I was dreaming of bright lights... Beautiful views... And friends... *(Addressing the audience)* Have **you** seen anyone?

The audience can hear someone shouting in the distance. The voice is strident, getting closer. A second water molecule appears, stately, very well-groomed. Posh accent. Imagine Margaret Thatcher, or Hergé's Castafiore

AQUACHANEL *(waving frantically, trying to catch Aquatic's attention):* Oooooooooooooo...! Hey! You there! I'm looking for the aquaport.

Aquachanel is obviously suffering from the heat. Aquatic, though delighted to meet someone, is put off by Aquachanel's appearance and ways.

AQUATIC: Sorry? You're looking for the aqua-what???

AQUACHANEL: The aquaport, dear friend, the aquaport! *(Readjusting her hair)* I've decided to spend a few days beside the sea, away from all this pollution. Look at me. Just look at my complexion. Bleached... Aaaaah! The salty sea air! The tumbling waves! It's time for some adventure! No more fetid air! No more humid stench! I want Sea! Sun! Beauty! Life! *(Theatrical. Aquatic just stares)* Let me introduce myself. My name is Aqua-Chanel. I live – or should I say 'lived' – in an aquarium. In the Grand Hotel. A grand life I had too... Business lunches... Ladies in diamonds... Men in clouds of cigar smoke... But I needed a change. I'd had enough. So I climbed onto a lobster that was to become Sir Brumpton's dinner... and escaped!

AQUATIC: Oh... I see... Well... Eem... My name is Aquatic ... I live in a gutter... And... How do you intend to get to the sea?

AQUACHANEL: I've just told you. Once I've found an aquaport. *(Looking at him)* No... You don't mean to say... What?... You've never taken an aquadrop? For Molecule's sake! I don't believe it! Where have you been trickling?

AQUATIC *(slowly):* An aquadrop??!!

AQUACHANEL: Ah yes. Perhaps you're too young... *(Condescending)* My dear Aquawhatwasyourname?

AQUATIC: Aquatic

AQUACHANEL: Yes. Well, my dear Aquadike, an aquaport is a place where we – i.e. water molecules – can fly to other destinations.

AQUATIC: Oh yeah? How?

AQUACHANEL: I was getting there. You need to find a place that heats. I was told there's a laundry somewhere around here. That's where your local aquaport would be. And... once heated, up you go! Weeeee!!! You're flying! *(Pause. Turns to look at Aquatic)* Exciting... No?

AQUATIC: And where d'you fly off to?

AQUACHANEL: Wherever you want, Aqualuv. Wherever you want!

AQUATIC: Somewhere clean, fun and that doesn't stink...? *(Beginning to feel excited)*

AQUACHANEL: No we don't...

AQUAFORTIS: Well then, as you don't know...one molecule of water is made out of two atoms of hydrogen bound to one atom of oxygen.

AQUACHANEL: How wonderful. Can you not just get to the point?

AQUAFORTIS: Can you not just stop interrupting me (*Irritated*)? When a water molecule is electrolysed, the bonds are broken...

AQUACHANEL (*wincing*): Ooooh....

AQUAFORTIS: ... the oxygen atoms shoot off in one direction, and the atoms of hydrogen in another. In short... (*Aquafortis draws the equation on a blackboard: $2H_2O \Rightarrow 2H_2 + O_2$*)

AQUACHANEL: Enlightening...

AQUAFORTIS: In short, it's a bit like being electrocuted.

AQUATIC (*turning pale*): Right... Well... Why not come with us? We're going to the seaside. What did you say your name was?

AQUAFORTIS: I didn't. It's Aquafortis.

AQUATIC: I'm Aquatic and this (*Nodding in Aquachanel's direction*) is Aquachanel. Come on! All to the laundry!

AQUACHANEL: Yes! Come on Aquaerobics!

AQUAFORTIS: Aquafortis Madame, Aquafortis...

Voice off: Next evaporation in 10 minutes. Boarding immediately. Weather conditions: good. Condensation expected above the Mediterranean. Fly with EasyDrop and the world is yours.

Scene II

In the sky.

AQUATIC: Woooooow!!! This is coooooooooooooooooooooool!!

AQUAFORTIS: Oooh... I'm feeling sick... Anyone got a paper bag?

AQUACHANEL: What an adventuuuuuuuuuuuuuuuuuuure!

AQUAFORTIS: Out of interest... Geographical interest... Where will our cloud be condensing? (*Still holding his stomach*)

AQUACHANEL: Above the Mediterranean! But we've plenty of time! Not used to travelling, are you? Admire the horizon! You'll feel instantly better!

AQUAFORTIS: Yeah...

For a while, no one says a word. Then Aquafortis starts looking a little worried.

AQUAFORTIS: Are we almost there?

AQUACHANEL: Well... Seeing that we have to fly over Lake Geneva, and then the Alps before we make our descent to the Mediterranean. And seeing that we have not reached the other side of the lake, I think it is quite safe to say that we are *not* almost there. No. (*Suddenly extatic*) Oh! Just look at that view!

AQUAFORTIS: I see... (*Ignoring Aquachanel's enthusiasm*) So... I suppose that the sudden drop in temperature and the massive condensation above us shouldn't be of the least worry to us?

No one has time to react. A violent storm breaks out and the three freefall at top speed onto an alpine field full of mosquitoes, flowers, bees, flies and frogs. And a river running through it.

Scene III

Ground with roots and tiny beasties.

Voice off: Aquafortis, Aquatic and Aquachanel land heavily on the ground below. Before they have time to realise what has happened, a crack opens suddenly in the ground, and they disappear into the dark, humid, warm depths of the soil... from where they are sucked up by a dandelion root. When they finally come to their senses, the three of them are facing the entrance to a dark tunnel.

AQUAPORIN (*Swiss-German accent*): Who goes there?! Who *are* you?

AQUACHANEL: What d'you mean, who *are* we? Who are *you*?

AQUAPORIN: My name is Aquaporin; I'm an aquacustomsofficer.

No one says a word. Aquaporin continues.

AQUAPORIN: I'm a protein. In the shape of a pore. I only let water molecules through me.

AQUACHANEL: What a delightful stroke of luck! That's just what we are! Step aside!

AQUAFORTIS: ... only molecules of *water*?

AQUAPORIN: Ya!

AQUAFORTIS: Why?

AQUAPORIN: I trust you know that living matter is made out of water? At least... Almost... Water is the basis of life. Water goes in... and out...

AQUACHANEL (*interrupting him*): ... Here we go again...

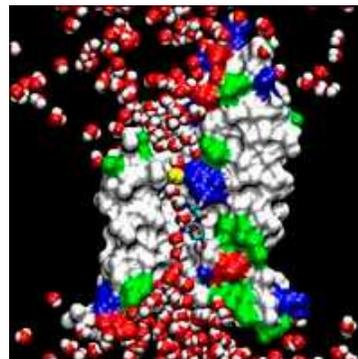
AQUAPORIN: ... water goes in and out of every organism. And once inside, it has to be able to go from one cell to another.

AQUATIC: What's a ce...?

AQUACHANEL (*putting her hand over his mouth, thereby muffling the end of the word*): Look why don't we talk about this another day? We're on our way to the seaside. All we want to know...

AQUATIC (*putting his hand in front of Aquachanel's mouth*): ... is what a cell is...

Aquachanel glares a glare that could kill.



Molecules of water (in red and white) passing through an aquaporin channel. Courtesy of Pittsburgh Supercomputing Center. Animated image: <http://www.ks.uiuc.edu/Gallery/Movies/aquaporins/chemanim1.mpg> - 13,1 MB (1)

AQUAFORTIS (*whispering*): Cells are like the bricks of a house. You need lots of them to make an organism. Dandelions or frogs.

AQUAPORIN: Absolut! A daisy or a snail. A rose or a worm. A blade of grass or an elephant.

Aquatic and Aquafortis join in, much to Aquachanel's disgust.

AQUATIC and AQUAFORTIS: A chestnut tree or a badger! A thistle or a whale! A water lily or a sea anemone!

AQUACHANEL: Arabidopsis thaliana or Mus musculus.

AQUATIC and AQUACHANEL (*together*): What on earth are these?

AQUAFORTIS: Mouse-ear cress and a mouse... (*Matter-of-fact tone*)

AQUATIC: Show off...

AQUAFORTIS: Anyway... There are different kinds of cells: brain cells, skin cells, eye cells, heart cells...

AQUACHANEL (*fed up*): Will there be any chance of a holiday? Ever?

AQUAPORIN (*ignoring Aquachanel*): Exactly! And on the surface of each cell, you find holes.

AQUACHANEL: I beg your pardon! (*shocked*)

AQUAFORTIS: ... that only let water molecules through...

AQUAPORIN: Ya! Exact!

AQUACHANEL: What are we waiting for then?

AQUAPORIN: Such holes are called Aquaporins.

AQUACHANEL: Aaaaaah... Now you're talking...

AQUAPORIN: But... there's a minor problem... (*The three molecules listen intently*) Protons...

AQUATIC: Prowhats?

AQUAFORTIS: Protons. Protons are molecules of hydrogen.

AQUAPORIN: Ya. Protons try to get through too.

AQUACHANEL: So? The more the merrier!

AQUAPORIN: Nein! They are not allowed through! (*Almost screaming*) According to the rules of life!

AQUACHANEL: Fine. **Don't** let them through then. Whatever suits. (*She sighs*) Can we not just go? Please? (*Pleading*)

AQUAPORIN: Ya. (*Calm now*) We – the Aquaporins – have to be on our guard. Constantly! We must make sure that protons DO NOT PASSSSSSSSSSSSSS. Nein! That is why... you are going to have to hold on for dear life my friends... (*His tone becomes mysterious, almost worrying*)

AQUATIC (*worried*): Hold on? Why?

AQUAPORIN: Because, Mein Kleiner, towards the middle of the tunnel, you'll have to perform a pirouette...

AQUACHANEL: Oh! How delightful! A pirouette! The last time I did one of those, I must have been... let's see... *(Her voice floats off dreamily)*

AQUAPORIN: This is not a ballet class Meine Dame. The pirouette you have to do will shake off the protons. And then you'll continue your journey on your own.

AQUACHANEL: How fascinating... Look, I don't want to sound repetitive... But all we want, is to reach the sea. And you would be doing us a great turn – not to say pirouette – were you to show us the way, Herr Aqua... *(Hesitating)*... phorin.

AQUAPORIN: Ya! Natürlich! Just take one of the aquaroutes. At the moment, you are in a... ach... how do you say... ach... ein dandy...

AQUACHANEL: A dandy? How enchanting!

AQUAPORIN: Nein! Ach ya, ein dandelion. And there are Aquaporins everywhere.

AQUACHANEL: Thanks be to the dandelions!

AQUAPORIN: Ya. Thanks to Aquaporins, water can get from the tip of a dandelion down to its roots.

AQUACHANEL: What are we waiting for then? Come on! Let's go!

AQUAPORIN *(shouting over Aquachanel):* Follow the signposts! AquaRoot. AquaLeaf. AquaStem and so on... *(Screaming now to be heard as the three molecules set off in a fluster)* If I were you I would take AquaStem, and then AquaLeaf and finally AquaTranspiration.

AQUATIC *(stops dead in his tracks):* Transpiwhat?

AQUAFORTIS: Transpiration.

AQUACHANEL: Don't Aquafortis. Just don't.

AQUAFORTIS *(ignoring her):* Transpiration is what happens when you find drops of water on the surface of leaves...

AQUACHANEL: Rain you mean...

AQUAFORTIS: Other than rain... *(Continuing his trail of thought)*

AQUATIC: I get it!

AQUACHANEL: What could *you* possibly get?

AQUATIC: The dandelion is going to transpire us!

AQUAPORIN: Ya!!

AQUACHANEL: It certainly is *not* going to transpire me!

AQUATIC: I thought you wanted to go to the seaside?

AQUACHANEL: I do. But within reason. What's wrong with good old-fashioned aquatransport?

AQUAFORTIS: Transpiration is as old as water...

AQUACHANEL: (...) What... Millions of years old?

AQUAFORTIS: Yup. *(Aquaporin nods eagerly)*

AQUACHANEL: How come I knew nothing about it then?

AQUAPORIN (*wisely*): One cannot know everything. (*Aquafortis, Aquachanel and Aquatic look at him, expectantly*)

AQUACHANEL: Yes... Well... So... We are to be transpired?

AQUATIC: Yeah! Come on! It's exciting!

AQUACHANEL: How?

AQUATIC: The plant is going to transpire... sweat if you like, and that's how we'll be able to leave it! It's ingenious.

AQUACHANEL: Revolting, if you ask me. Well! If there's no other choice, let's go. Enough hanging around!

AQUAPORIN: Go in one by one, and hold onto each other tightly. Once you've reached the middle of the tunnel, let go! You'll see, a couple of protons will try to get through with you but just shake them off. Good luck! And Bon Voyage!

The three molecules hold hands and go to the tunnel's entrance, where a strong current sucks them in. As Aquaporin had predicted, a horde of protons surround them like midges. Despite trying to wave them off frantically, one proton manages to bind to each one of them.

AQUACHANEL: Get away you vicious little creature!

Voice off: The three molecules approach the middle of the tunnel. Aquachanel – first in line – is pulled in before the others and plastered against the tunnel's inner wall. Simultaneously, the proton holding onto her loses its grip. Aquachanel barely has time to rejoice before she is pulled forward and performs, quite unintentionally, a magnificent pirouette. Both Aquafortis and Aquatic go through the same process. Everything happens so fast that no one has the time to react and before they know it, they reach the other side of the tunnel.

AQUACHANEL (*dealing with her hair again*): Well! I do prefer an Aquadrop but it was fun... No? (*Turning round to see the others*)

AQUATIC: I'm really going to be sick this time...

AQUAFORTIS (*taking his glasses off to wipe them*): Wow! What an astonishing experience! Did you feel the way we were swept forwards? The way the protons let go? The perfect pirouette? The whole process is ingenious... Really... I wonder who thought it up. I'd love to meet him.

AQUACHANEL: Or her...

AQUAFORTIS: There are a few modifications I would suggest though... Regarding comfort...

AQUACHANEL: You can do all your research another time Aquarium. We still have to find our way.

AQUAFORTIS (*weary*): Aquafortis, Madame, Aquafortis...

AQUACHANEL: Ah yes. Aquafortit (*Aquafortis rolls his eyes*) Come. Let's find some sign posts and get out of this wretched dandelion.

AQUATIC: Oh! I can see one! There! It says 'AquaStem'. Is that not what Aquaporin suggested?

Voice off: The three molecules follow the direction of the signpost and, from Aquaporin to Aquaporin, proceed along the cells in the stem and are finally transpired out of the flower onto the surface of a leaf.

AQUATIC: Ah! Fresh air! (*Breathing in heavily*) One more pirouette and it would have all come out! (*Looking nauseous*)

AQUACHANEL (*looking round*): This does not look like the French Riviera...

AQUAFORTIS: No. Quite clearly. That is not sand that lies before us.

AQUACHANEL: No. It's a field. (*Addressing Aquafortis*) Can't you talk properly, like everyone else?

AQUAFORTIS: Quite. (*Ignoring her*) Not only is it a field – and hence from a geographical point of view quite the opposite of what we were expecting – but it also leads me to believe... (*He stops abruptly upon noticing Aquachanel's expression*) Oh, ...wet's the point? (*Vexed, he wanders off*)

No one says anything for a time until Aquatic suddenly exclaims:

AQUATIC: Look over there! (*Everyone turns to look*) What is it? It looks like two huge black balls... And that funny pointed thing between them... (*The thing is heading straight for them*) Look out! It's coming straight for us!!!!!!!

Scene IV

The unidentified flying object is buzzing a deafening buzz and heading straight for them. The three companions rush off, looking for somewhere to hide.

AQUATIC: Run for it!!

AQUACHANEL: Help!!

AQUAFORTIS: Au secours!

AQUACHANEL: What?

AQUAFORTIS: Au secours... It's French for help... (*Aquachanel rolls her eyes*)

Voice off: The two huge black balls are the eyes of a mosquito that is making a... mosquito-line for the three of them! The mosquito approaches the dandelion's leaf and the three molecules can't hear what the others are saying for its buzz. And before they know it, the mosquito sucks them up in an ear-splitting row and flies off.

After having been pulled through a long opaque tunnel at high speed, the three companions land in a dark cave, covered in bloodstains...

AQUATIC: Brrrrr, it's horrible here..... where are we?

AQUAFORTIS: Inside an insect I think. I would even venture to say:

AQUACHANEL: Please don't...

AQUAFORTIS: ...we're probably inside a mosquito...

AQUACHANEL: What?! You mean to say that this apprentice-Boeing that came crashing down on us was just a mosquito? *I* have been swallowed by an insect?

AQUATIC: *We* have been swallowed...

AQUACHANEL: Molecule of molecules!

AQUAFORTIS: Think yourself lucky...

AQUACHANEL: Think myself lucky? How more unlucky can I get?

AQUATIC: Can *we* get...

AQUAFORTIS: I think we've been very very fortunate. We've just been through a fascinating process. We are in a mosquito's sting. Take a look around. This only happens once in a molecule's life.

AQUACHANEL: It shouldn't happen at all! But I won't be keeping you if this is where you want to spend your holidays!

AQUATIC: If I could just get a word in...

AQUACHANEL: Yes... (*Snaps*)

AQUATIC: I don't really want to hang around here either...

AQUAFORTIS: Fine. Let's find the closest aquaway.

AQUACHANEL: We are *not* in a dandelion anymore Mister Aquaculture.

AQUAFORTIS: Have you already forgotten what the aquacustoms told us? Aquaporins are found in ALL LIVING MATTER!

AQUACHANEL: Humph...

AQUAFORTIS: Consequently, mosquitoes must be full of Aquaporins too.

AQUACHANEL: They'd better be.

AQUATIC: Come on then! Let's find a signpost! There must be one somewhere!

AQUACHANEL: Something like this...? (*She points to a huge multidirectional signpost that no one had noticed*) It's the last time I'm going on a break with you...

Aquatic goes up to the signpost to get a closer look.

AQUATIC: AquaHead, AquaAbdomen, AquaThorax, AquaPaws.... Well, at least there's a choice!

AQUAFORTIS: But if we want to get out of here... alive... we need to find a way that will lead us to the outside of the mosquito...

AQUATIC (*still reading the signposts*): How about AquaPaws? Sounds fun, doesn't it?

AQUAFORTIS: We're not here for fun.

AQUACHANEL: OH YES WE ARE!

AQUAFORTIS (*glaring at Aquachanel*): If we really want to get out of this mosquito...

AQUACHANEL: There's no 'if' my dear molecule...

AQUAFORTIS: If we want to get out, we'd better follow something like AquaBladder... or something...

AQUACHANEL: What a fanciful idea! An AquaLadder! Yes! Let's go there!

AQUATIC: He said an AquaBladder...

AQUACHANEL: And what's a bladder?

AQUAFORTIS: I was coming to that...

AQUATIC (*clearing his throat*): It's where your... eem... urine comes from...

AQUACHANEL: Urine?

AQUAFORTIS: Yup.

AQUACHANEL: And what is urine Aquaknowall?

Aquatic moves away from Aquachanel.

AQUAFORTIS: Another word for urine is pee.

AQUACHANEL: Pee?!!!! (*Shocked*) You want me to use pee as a means of transport? Have you the faintest idea where I come from? How, in your wildest imagination, could you think that a molecule of my class would travel using pee? And, what's more, Mosquito's pee! You are out of your tiny little mind!

AQUATIC (*almost in a whisper*): You're just a molecule of water... you know... just like me and Aquafortis... You've been part of pee before... I'm sure... We all have...

AQUACHANEL: I beg your pardon I have not! Never have I ventured in these regions... I'm not any old molecule of water you know...

AQUATIC (*keeping his calm*): We all look very alike... One molecule of water is very much like another...

AQUAFORTIS: He's right... An atom of oxygen, and two of hydrogen. Difficult not to look alike really...

Aquachanel stamps off in a huff.

AQUATIC: So... What shall we do? (*Turning to Aquachanel*) Stay here for the rest of...?

Aquatic doesn't have the time to finish. Something grabs hold of him from behind and pulls him up. Aquafortis and Aquachanel gaze on, dumbstruck.

THE THING: Ha ha! Come here little one! Come and make yourself useful!!! Ha ha ha!!!

AQUATIC (*frightened*): Who are you? Let me go! What do you want?!

THE THING: Let you go? Never! Ha ha ha!!!

AQUATIC (*more and more frightened*): Who *are* you?

THE THING: Who I am? (*Aquatic nods and gulps*) I'm Chymotrypsin.

AQUATIC: Ch..ch....chy...mo....mo....

THE THING: Almost right... Chymotrypsin. I terrify other proteins.

AQUATIC: T... t..... ter..... ffffffff...

THE THING: You really do have elocution problems, don't you? Been to see a logopedist?

AQUATIC: Lo... Lo... Gogo?

THE THING: Although once I've finished with you, you won't be needing one any more really...

Aquatic tries to get away but Chymotrypsin has got a good hold on him.

THE THING: I digest proteins.

AQUATIC: ge... ge... gest?

THE THING: Yes. Digest. *I* digest the proteins that this mosquito eats...

AQUATIC (*addressing Aquafortis*): Wh... wh... what does di... di... digest mean Aquafortis?

AQUAFORTIS (*frantically looking up the word in a dictionary*): Ah here it is! Oh...

AQUATIC (*getting angry*): WHAT DOES 'DIGEST' MEAN AQUAFORTIS?

Aquachanel has a look at the dictionary too and lets out a little shriek.

AQUAFORTIS: Digest means 'to eat' Aquatic...

AQUATIC (*horrified*): I'm going to be eaten?

THE THING: I'm afraid so. Mmmm... You look nice and juicy...

AQUATIC: I'm not! I'm dry and skinny! Find something else to eat! Let me go!

THE THING: But I need you. Or one of your friends... I don't mind (*The thing has a look at Aquafortis and Aquachanel who both take a step backwards*) Which one would you like me to pick? The fat one?

AQUACHANEL: HOW DARE YOU?!

THE THING: Or that little scrawny one with the big head?

AQUAFORTIS: Who me?

AQUATIC: No one! No one! We're going on holiday!

THE THING: Well one of you isn't... Make up your minds... I'll give you three seconds...

AQUATIC: Wait!! Wait!! What d'you need one of us for?

THE THING: I need you to break up other proteins. And if I don't break them up, the mosquito is in trouble.

AQUACHANEL: So? Where's the problem?

THE THING: One problem could be that you won't ever find your way out...

AQUACHANEL: Ah. Yes. You have a point there.

AQUAFORTIS: But from what I've understood, one of us isn't going to make it anyhow.

THE THING: Spot on. He's a bright little fellow, isn't he?

AQUATIC: Can't you do without water just for now?

THE THING: Not really... You see I've got to chop up proteins into tiny little bits called amino acids...

AQUACHANEL: Oh no... Is there nowhere we can go without being lectured one way or another?

AQUAFORTIS: I find it quite interesting actually.

AQUATIC: You'd find it less interesting if you were here!

THE THING: I was saying, I break down proteins into different kinds of amino acids. And these are used to make thousands of new proteins!

AQUACHANEL: I'm thrilled.

AQUAFORTIS: So what's the molecule of water for...?

AQUATIC (*screaming*): HE'S JUST TOLD YOU, HE NEEDS ONE EVERY TIME HE BREAKS A PROTEIN!

AQUAFORTIS: Well, can't you just use Aquatic?

AQUATIC: Oh thanks very much! *You're* all right, aren't you! (*Struggling*)

AQUAFORTIS: I hadn't finished... Use Aquatic and then give him back to us...

THE THING: I'd love to. But it's not so simple I'm afraid. Aquatic will be destroyed in the process.

AQUATIC: DESTROYED! Did you hear what he said? DESTROYED!

AQUACHANEL: Yes, yes, we heard Aquatic. (*Turning to the Thing*) Listen Herr ChyChy, we are *not* available. We're on holiday. (*Fishes out an out of office 'on vacation' reply*) We'll get back to you in a couple of weeks. If it's urgent, here's a number you can call.

THE THING: You don't get me, do you? Enough. Come here you. I can see a lovely puddle of blood to digest over there. (*He drags Aquatic along with him*)

AQUATIC: HELP! HELP ME! AQUAFORTIS! AQUACHANEL! DO SOMETHING!!!

There is not much Aquafortis and Aquachanel can do and they just stare in disbelief. Chymotrypsin hauls Aquatic over to a puddle of blood that has just been sucked in by the mosquito.

AQUACHANEL: Do something Aquanaut! We can't just let the brute take Aquatic away.

AQUAFORTIS: I'm thinking...

AQUACHANEL: Well think harder! And faster!

AQUAFORTIS: There must be a way... There must be...

Suddenly, the mosquito stops flying and everyone is thrown against the walls of its mouth. Stunned, Chymotrypsin lets go of Aquatic who seizes the opportunity to escape from its grasp. He rushes over to the other two who are only just recovering.

AQUATIC: Come on! Hurry! While the monster's still giddy!

AQUACHANEL (*still a little dizzy*): Goodness! That's quite an idea you had there Aquafortis!

AQUATIC (*not understanding*): What?

Aquafortis is beginning to realise what has just happened.

AQUAFORTIS: Come on! Fast!

The three molecules run off as fast as they can. Breathless, they stop once they are far away from Chymotrypsin.

AQUACHANEL: By Molecule! What happened?

AQUAFORTIS (*gathering his senses and putting his glasses back on*): I think the mosquito was probably swallowed by another creature...

Aquachanel sighs and faints.

AQUATIC: What?! What kind of creature?

Aquachanel comes to, though she is obviously still dazed.

AQUACHANEL: Put the parasol up...

Aquatic kneels down beside her to wipe her brow.

AQUACHANEL: The sun is really scorching...

AQUAFORTIS (*uncertain*): We're almost there Aquachanel...

AQUACHANEL: Oh. How lovely. Find a terrace. Order some ice-cream. (*Aquafortis and Aquatic look at each other, puzzled*)

AQUAFORTIS: Let's find out who swallowed us.

AQUACHANEL: Oh no. Just strawberry ice-cream thank you.

Scene V

AQUAFORTIS: Right. Let's start thinking. Who would have swallowed a mosquito? (*Talking to the audience*) A dog? A horse? A sheep? I know! It must have been a frog!!!! (*Turns to talk to Aquatic and Aquachanel*) Well, here's the choice: either we wait for our mosquito to be digested by the frog and then be freed, or we go back down this tunnel. And we'll decide what to do once we're on the other side.

Aquachanel and Aquatic do not respond.

AQUAFORTIS: Agreed? (*No reaction*) Right. I'll decide, follow me.

The three companions set off towards the exit of the mosquito's sting, which they walk through, and out, to finally enter a huge cavity covered in shiny slime.

AQUAFORTIS: There we are! (*Proud as a peacock*)

AQUACHANEL: *Where* are we?

AQUAFORTIS: In the frog's stomach!

AQUACHANEL: Ugh...

AQUATIC: Smells like it...

AQUAFORTIS: Let's find the closest aquaway.

AQUACHANEL (*looking a little downcast all of a sudden*): To think that without that unfortunate storm, we'd be sipping sodas beside the sea by now... Tell me, Monsieur Aquavit, could we not stop for a little rest?

AQUAFORTIS: No! Of course we can't stop for a little rest. We've got to find aquaway signposts or we'll get nowhere at all!

AQUATIC (*also looking a little downcast*): Can't see any...

AQUACHANEL: You're telling me...

Voice off: The problem is: a mosquito is far smaller than a frog. One multidirectional signpost was sufficient to indicate all the aquaways in the mosquito. However, in the frog, they are dispersed. The three molecules search. And search. And search.

AQUATIC: We've been looking for hours. We're going round in circles and we haven't even found *one* signpost.

AQUACHANEL: Not one...

AQUAFORTIS: Aw, come on...

AQUATIC: What?

AQUAFORTIS: We did find some...

AQUATIC: Yeah... AquaBlood, AquaKidney, AquaHeart... Nothing that'll lead us out of this creature.

Aquachanel: And to top it all off, we don't even know where we are now.

Voice off: As the three saunter, disheartened, around a corner, a violent wind hits them. The molecules are whipped into the air and swung in every direction, caught in a kind of hurricane. In reality, they have ended up in the frog's lungs, and are being tossed rhythmically with its breathing.

AQUAFORTIS: Hold on! Assemble into a drop of water! It's our only chance to escape the air current!!

Voice off: The three molecules are out of control. The only way they can move on is to wait for a puff of air and hold onto whatever they can find so as not to be dragged backwards. Unfortunately, they are blown forwards so fast that they don't have the time to read the signposts that go shooting past them. They reach a hair-pin and are flung into a secondary junction, where the current weakens drastically and then drops completely. The three land heavily at the foot of a signpost on which is written: 'AquaEyes'.

AQUATIC: Phew...

AQUAFORTIS (*pensive*): Right... If we head for the frog's eyes, at least we'll be able to see things a little more clearly...

AQUACHANEL: Oh that's really very funny Mr Aquadroplet. Hilarious.

Voice off: The three molecules march off towards the frog's lachrymal glands, where its tears are formed. After a while, Aquachanel, Aquafortis and Aquatic are faced with yet another Aquaporin, larger than any they have seen yet.

AQUAPORIN: Ah! Finally some water! About time too! Our frog needs tears to shed!

AQUAFORTIS: And a life without tears is like an Aquaporin without water... (*Aquachanel gives him a glare he's not ready to forget*)

AQUAPORIN: Yes... Undoubtedly. Well? Ready? (*The three molecules nod vigorously*) Departure in...

Aquachanel interrupts him.

AQUACHANEL: Just a second! Not so fast! Our destination is not a mere tear...

AQUAPORIN: I beg your pardon?

AQUACHANEL: I will not swap an ocean for a tear!

AQUATIC: What she means is that we were on our way to the Mediterranean...

AQUAFORTIS: ... for a holiday...

AQUAPORIN: Ah yes. I see. The thing is, Madame, your tourist destination is not in my hands. All I can wish you is 'Bon Voyage'...

AQUACHANEL: Bon Voyage!?! Bon Voyage!?! Did you hear what he said?

AQUAPORIN: Once you've reached the other end of me, I've no idea what will happen to you next.

AQUACHANEL: Charming...

AQUAFORTIS: I really don't see the problem... At least we'll be on the other side of this frog. Free!

AQUATIC: Yes!

AQUACHANEL: Oh Aquaduct, you're such a know-all, aren't you? Fine. If that's the way things are, let's go. And we'll see what happens next.

Voice off: Delighted with their decision, Aquaporin shows them the way into the tunnel. The three molecules hold each other's hands and disappear inside. The moment they enter, dozens of protons appear. This time, the three molecules don't even try to flick them away. Once again, they sense the force which plasters them against the pore's inside wall and makes them do a pirouette, shedding the protons in the process. They reach the other side.

AQUATIC: Ooooooooooooooooooooooh..... Oof... (*Holding stomach, looking very sick*)

AQUACHANEL: Cheer up! It's the last time we'll be doing this.

AQUATIC: Oh yeah? What makes you so sure?

AQUACHANEL: A sixth sense my dear. A sixth sense.

AQUAFORTIS: You have a sixth sense?

AQUACHANEL: Unlike yourself Aquabasic.

Voice off: Suddenly, everything begins to shake. The three molecules look at each other, wondering what is going to happen next.

AQUACHANEL: Now what? An earthquake?

AQUAFORTIS: More like a frogquake...

Voice off: Indeed, our frog has met another frog-friend of his, by the riverbank, who has just told him a funny story. Rocking with laughter, the frog's body has begun to shake. And shake so hard that it creates a huge pressure in the frog's tear glands, which becomes unbearable for the three molecules caught inside. Squeezed one against the other, Aquachanel screeches:

AQUACHANEL: Don't let go! Stick together!

Voice off: A passageway opens abruptly before them, and once again the molecules are sucked into a strong current and appear on the edge of the frog's eye, in a tear.

AQUATIC: Woweeee! Look at the view!

AQUAFORTIS: Can *you* see what *I* see?

AQUACHANEL: I doubt it my dear Aquatint, I doubt it very much.

AQUAFORTIS: Look! Over there! It's a river! And who says 'river' says (*Addressing the public*)...

AQUATIC: Seasick?

AQUAFORTIS: Yes! Who says 'river', says 'sea'!

AQUACHANEL: Just a minute. There is a huge difference between the seaside and a riverbank. It's the French Riviera we are heading for, not the suburbs of Basel.

AQUAFORTIS: Exactly! What I mean is...

AQUACHANEL: I've got it! Ingenious! You're right! For once! Rivers always end up flowing into the sea, don't they?

AQUAFORTIS: Precisely.

AQUACHANEL: Come on! Jump in!

AQUAFORTIS: No need to jump! All we have to do is wait for the next tear and we'll drop from the frog's eyelid into the river below. But we'll have to hold on really tightly! Ever been on an AquaBumper?

AQUATIC: Oh noooooooooooooo.....

Voice off: The frog has another fit of giggles and a second huge tear emerges from its tear gland and comes sailing into theirs. Hit face on, their tear curls up into a lovely round droplet, wobbles unsteadily in the corner of the frog's eye before losing its balance and falling down in the void below. Caught in the tear, the three molecules plummet down in what seems a very long fall.

AQUATIC: Deadly! Weeeeeeeeeeeeeeeeeeeeeee! We're flying!! Oops... (*Clutches his stomach*)

AQUAFORTIS: Magnificent colours below. Yes indeed. Had you noticed the cows grazing in the distance? And the dandelions there? I wonder if it's the one we know?

AQUACHANEL: Here I come French Rivieeeeeeeeeeeeeeraaaaaaaaaaaaaaaaaaa!!

Voice off: The tear drops with a lovely soft bounce into the river. Still holding onto each other, the three molecules sit back comfortably in the river's current.

AQUATIC: Oof... (*Retches*)

AQUACHANEL: No! Not now! We've made it! Look! We're heading for the sea! The sun! And the sand! Goodbye stinky gutters! Goodbye luxurious aquariums! Goodbye sewage and water purification plants! Adieu dandelions, mosquitoes and frogs. Hurray! Hallelujah! Hello SEA!!

AQUAFORTIS: We're only going on holiday... (*Blasé, stoic*) There's the whole journey back... (*Aquachanel ignores his remark*)

AQUATIC: Ohhhhhhhhhhhhh..... (*Groans*)

Scene VI

Beach, with the three molecules stretched out on deck chairs, sipping sodas.

- The End -

AquaWhat?

by Sylvie Déthiollaz and Vivienne Baillie Gerritsen
Swiss-Prot Group, Swiss Institute of Bioinformatics

Translated by Vivienne Baillie Gerritsen
Original title: A quoi ça rime, l'aquaporine ?

Play created for the "Nuit de la Science 2003" in Geneva.
Actors: Ariane Bourjault et Julien Abeglen
Scenery: Julia Baillie



Note :

(1) Simulation movie was made Drs. Emad Tajkhorshid and Klaus Schulten using VMD and is owned by the Theoretical and Computational Biophysics Group, an NIH Resource for Macromolecular Modeling and Bioinformatics, at the Beckman Institute, University of Illinois at Urbana-Champaign.

For further information on the aquaporins:

- Snapshot, 'Aquaporin':
<http://www.expasy.org/spotlight/snapshot/2007/08/aquaporin.shtml>
- Dossier de Protéines à la Une, 'Aquaporins: a Nobel Prize for the water ferries':
http://www.expasy.org/prolune/pdf/prolune011_en.pdf
- Protein Spotlight issue 36, 'Liquid states':
http://www.expasy.org/spotlight/back_issues/sptlt036.shtml

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