

Microbial globalisation

Autor(en): **Morgillo, Davide**

Objektyp: **Article**

Zeitschrift: **Trans : Publikationsreihe des Fachvereins der Studierenden am
Departement Architektur der ETH Zürich**

Band (Jahr): - **(2020)**

Heft 37

PDF erstellt am: **20.06.2024**

Persistenter Link: <https://doi.org/10.5169/seals-981481>

Nutzungsbedingungen

Die ETH-Bibliothek ist Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Inhalten der Zeitschriften. Die Rechte liegen in der Regel bei den Herausgebern. Die auf der Plattform e-periodica veröffentlichten Dokumente stehen für nicht-kommerzielle Zwecke in Lehre und Forschung sowie für die private Nutzung frei zur Verfügung. Einzelne Dateien oder Ausdrucke aus diesem Angebot können zusammen mit diesen Nutzungsbedingungen und den korrekten Herkunftsbezeichnungen weitergegeben werden. Das Veröffentlichen von Bildern in Print- und Online-Publikationen ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Die systematische Speicherung von Teilen des elektronischen Angebots auf anderen Servern bedarf ebenfalls des schriftlichen Einverständnisses der Rechteinhaber.

Haftungsausschluss

Alle Angaben erfolgen ohne Gewähr für Vollständigkeit oder Richtigkeit. Es wird keine Haftung übernommen für Schäden durch die Verwendung von Informationen aus diesem Online-Angebot oder durch das Fehlen von Informationen. Dies gilt auch für Inhalte Dritter, die über dieses Angebot zugänglich sind.

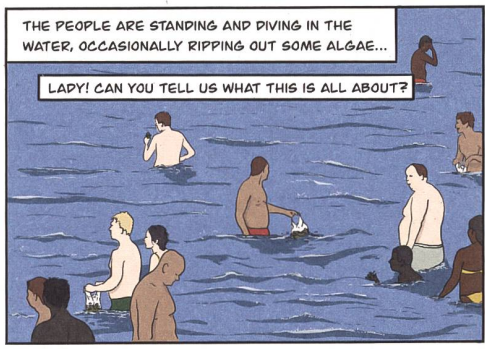
MICROBIAL GLOBALISATION

Davide Morgillo



WE ARE STANDING HERE ON A BALCONY OF THE „CRYSTAL BEACH“ RESORT AND SPA, ENJOYING THIS WONDERFUL VIEW OF THE WAIKIKI BEACH ON THE HAWAIIAN ISLAND O’AHU. THIS IS WHAT PEOPLE CALL THE SUMMER DESTINATION OF THEIR DREAMS: TROPICAL SUNSHINE, TURQUOISE BLUE WATER AND ENDLESS SAND BEACHES HOSTING TOURISTS ALMOST THROUGHOUT THE YEAR. BUT TODAY, A GROUP OF LOCALS HAVE GATHERED FOR WHAT THEY CALL THE „THE WAIKIKI ALIEN ALGAE CLEANUP EVENT.“ LET’S GO DOWN TO GET A CLOSER LOOK...

05:45 am People gather at Waikiki Beach in Hawaii to fight a 



THE PEOPLE ARE STANDING AND DIVING IN THE WATER, OCCASIONALLY RIPPING OUT SOME ALGAE...

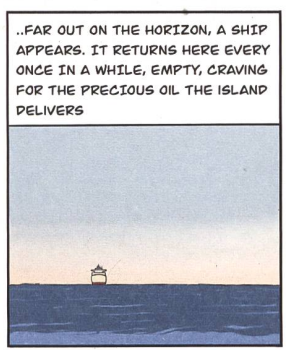
LADY! CAN YOU TELL US WHAT THIS IS ALL ABOUT?



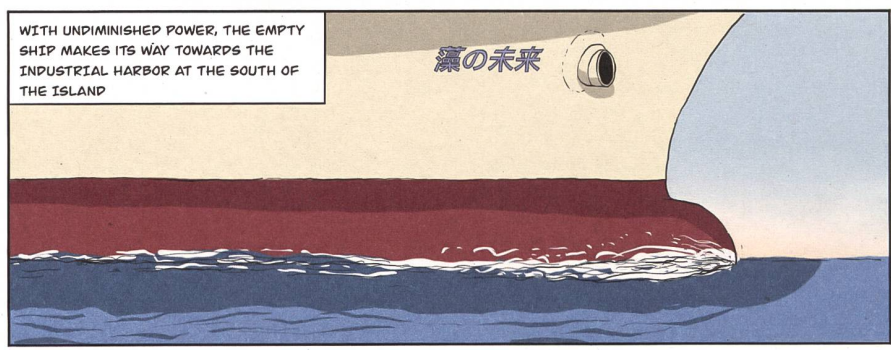
EACH TIME WE LOSE ANOTHER HAWAIIAN PLANT OR BIRD OR INSECT OR FOREST, WE LOSE A LIVING PART OF OUR ANCIENT CULTURE

THIS ALIEN PESTS MUST BE STOPPED. WE WANT TO CHOOSE OUR FUTURE AND SAVE OUR PAST!

STRONG WORDS INDEED! SO LET’S SEE WHERE THIS ALL STARTED...

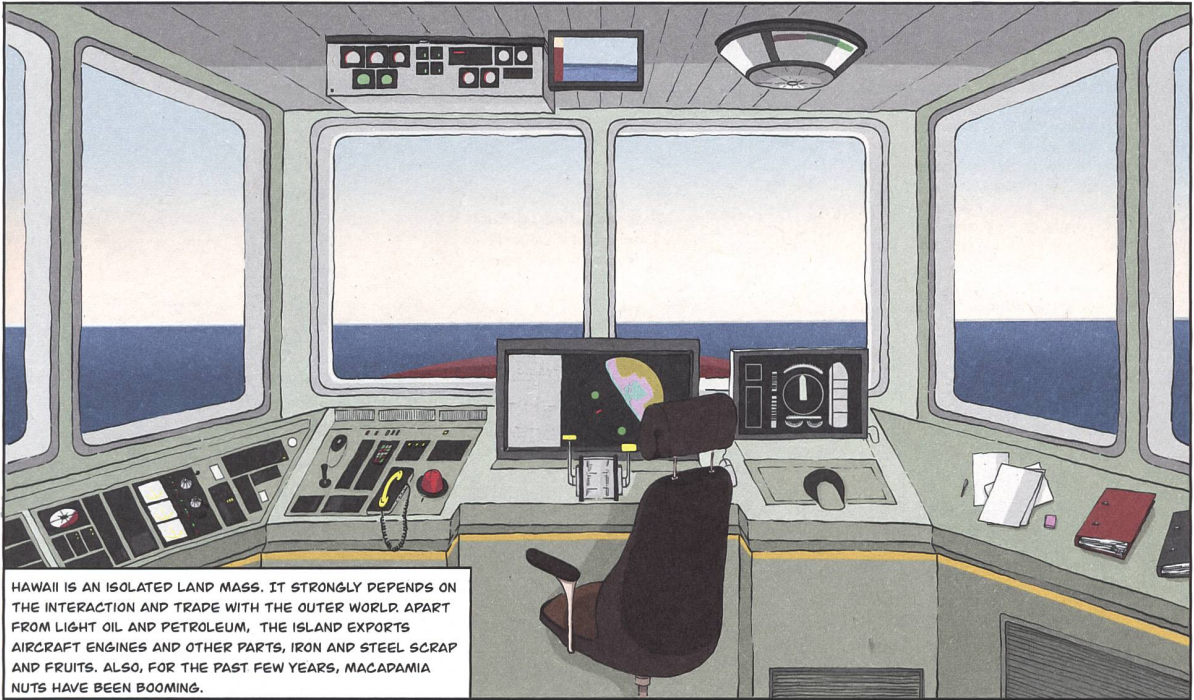


..FAR OUT ON THE HORIZON, A SHIP APPEARS. IT RETURNS HERE EVERY ONCE IN A WHILE, EMPTY, CRAVING FOR THE PRECIOUS OIL THE ISLAND DELIVERS



WITH UNDIMINISHED POWER, THE EMPTY SHIP MAKES ITS WAY TOWARDS THE INDUSTRIAL HARBOR AT THE SOUTH OF THE ISLAND

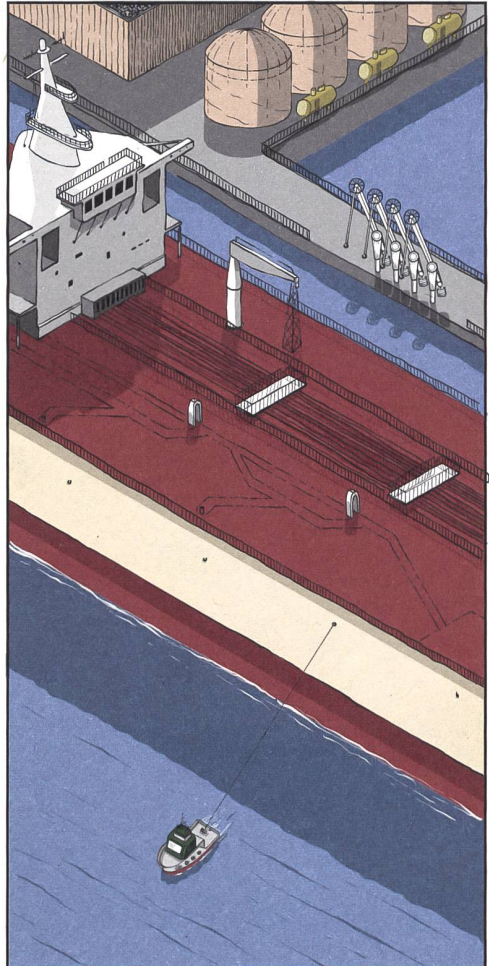
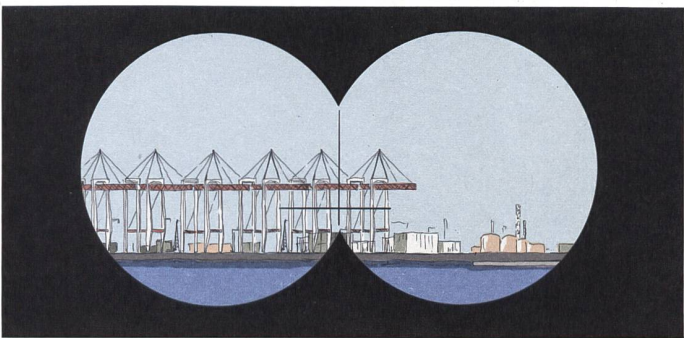
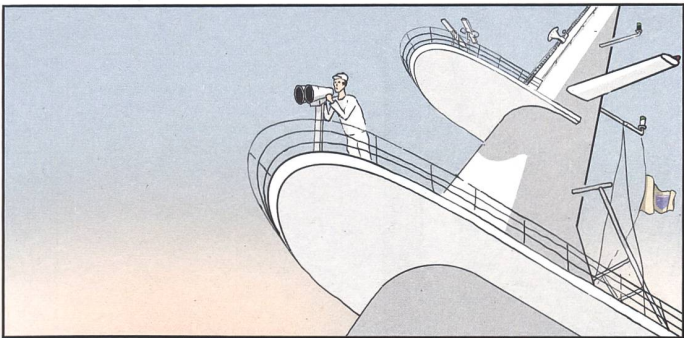
HONOLULU, O’AHU, HAWAII USA
5TH JUNE 2020, 05:46 AM
WAIKIKI ALIEN ALGAE CLEANUP EVENT



HAWAII IS AN ISOLATED LAND MASS. IT STRONGLY DEPENDS ON THE INTERACTION AND TRADE WITH THE OUTER WORLD. APART FROM LIGHT OIL AND PETROLEUM, THE ISLAND EXPORTS AIRCRAFT ENGINES AND OTHER PARTS, IRON AND STEEL SCRAP AND FRUITS. ALSO, FOR THE PAST FEW YEARS, MACADAMIA NUTS HAVE BEEN BOOMING.



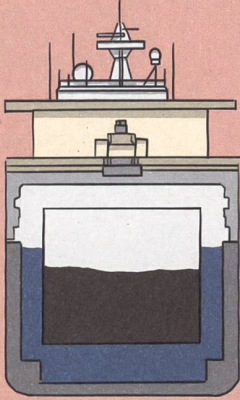
EVERY DAY, DOZENS OF CARGO SHIPS ENTER AND LEAVE THE INDUSTRIAL HARBOR ON THE SOUTH COAST OF THE ISLAND O'AHU



ONCE ARRIVED, ASSISTANCE COMES TO HELP. TUGBOATS TOW THE GIANT INTO POSITION TO GET CONNECTED TO THE MARINE LOADING ARMS AND FILLED WITH THE BLACK GOLD.

PACIFIC OCEAN, 5TH JUNE 2020,
08:23 AM, OIL TANKER 藻の未来

SHIPS OF THIS KIND NEED A CERTAIN DEAD WEIGHT TO FLOAT STABLE AND PERPENDICULAR IN THE WATER. THIS IS THE CASE WHILE THE SHIP IS FILLED WITH OIL OR LOADED WITH GOODS, BUT AS SOON AS IT GETS EMPTIED IT RISKS GETTING KNOCKED OFF-BALANCE. IN ORDER TO AVOID INSTABILITY, SECONDARY WATER TANKS, WRAPPED AROUND THE OIL TANK, ARE FILLED WITH LOCAL SEAWATER BEFORE TRAVELLING OVERSEAS.



JUST RECEIVED THE CONFIRMATION, REACHED TOPPING OFF, LIQUID FLOW STOPPED. WELL DONE!

CHECK! DID CHIEF OFFICER HABARI INFORM THE OTHERS ABOUT CLEANING THE TANKS?

YES, HE DECIDED TO TRAVEL 2 MORE.

AND THE BALLASTING?

NO CRITICAL STATES

WELL THEN, LET'S FERRY THOSE FRESH 52 THOUSAND GALLONS OF OIL ACROSS THE OCEAN!

ONCE IN O'AHU, THE SEA WATER IS Poured UNFILTERED INTO THE OCEAN WHILE THE OIL TANKS ARE FILLED UP ACCORDING TO THE ORDER.



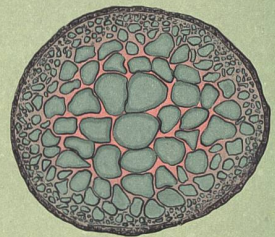
SEA WATER BROUGHT FROM A FOREIGN DESTINATION IS NOT ONLY HOME TO MARINE MAMMALS, FISHES AND SEAWEEPS BUT ALSO INHABITED, MAINTAINED AND MODULATED BY AN EXTRAORDINARY MIX OF MICROBES, MANY OF WHICH LIVE AT EXTREMES OF LIGHT, TEMPERATURE, PRESSURE AND CHEMISTRY.



NOT BIGGER THAN 5 MICROMETERS, SO CALLED PHYTOPLANKTON COMPLETELY CHANGE THE ECOSYSTEM WITHOUT HUMAN NOTICE. THESE MICRO-ALIENS CATALYSE THE GROWTH OF FOREIGN ALGAE, WHICH LEAVE NO SPACE FOR NATIVE SPECIES.



PHYTOPLANKTON, SCALE 350:1



THE „GRACILARIA SALICORNIA“ IS AN ORANGE-BROWN COLORED INVASIVE ALGAE THAT CAN BE FOUND IN THE SOUTHERN HARBOUR OF O‘AHU.

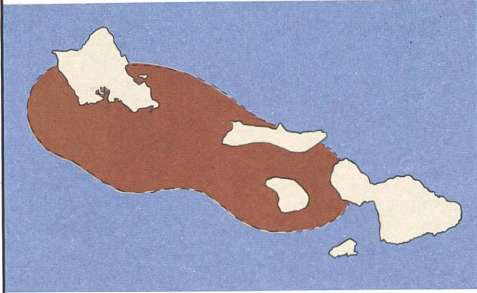
THIS PARTICULAR SPECIES HAS A SET OF CHARACTERISTICS THAT RENDER IT HARMFUL TO THE ECOSYSTEM. IT IS ADAPTABLE TO DIFFERENT HABITATS AND TOLERANT TO A RANGE OF CONDITIONS LIKE LIGHT, TEMPERATURE AND MOISTURE. ALSO, IT IS ABLE TO FEED ON ALMOST ANY GROUND, AND GROWS EXTREMELY FAST. BY TAKING OVER THE SEAFLOOR, IT DISPLACES NEARLY ALL OTHER PLANTS AND ANIMALS.



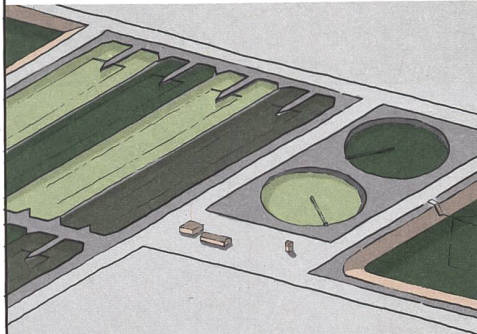
THE INVASIVE ALGAE DISTINGUISHES ITSELF FROM THE NATIVE SEAWEED IN TEXTURE, SHAPE AND TASTE. HOWEVER, THIS CHANGE, AS THE RESULT OF THE TRANSFER OF MICROBES, CAN ONLY BE DETECTED VERY LATE.

INDUSTRIAL HARBOR OF O‘AHU
JUNE 2020
DEEP OCEAN

THE PHENOMENON OF MICROBIAL GLOBALIZATION IS THE RESULT OF HUMAN INDUSTRY. THE MODERN WORLD'S ECONOMY REQUIRES A GLOBAL FLOW OF GOODS AND INFORMATION WITH AN EXTREME SPEED THAT NATURE CAN'T WITHSTAND.



THE INVASIVE ALGAE BLOOM IS SPREADING UNCONTROLLED, REACHING THE NEIGHBOURING ISLANDS MOLOKAI, LANAI AND MAUI.



CULTURALLY, ALGAE ARE STRONGLY LINKED TO THE HAWAIIAN PEOPLE. THEY ARE USED FOR EVERYDAY COOKING AND MEDICINE. REPLACING THIS RESOURCE MEANS LOSING A PART OF THEIR CULTURAL IDENTITY.

THAT'S WHY THE NATURAL ENERGY LABORATORY OF HAWAII INVESTED IN ARTIFICIAL PRODUCTION OF NATIVE ALGAE.



WE PRODUCE ENOUGH NATIVE LIMU SO EVERYONE CAN ENJOY A GOOD AHI LIMU POKE AGAIN

SAYS LAURENT BECKER, EMPLOYEE OF THE NATURAL ENERGY LABORATORY OF HAWAII



SO IT SEEMS THAT SOLUTIONS ARE BEING DEVELOPED TO TACKLE THE SITUATION, ESPECIALLY HERE ON THE ISLAND O'AHU

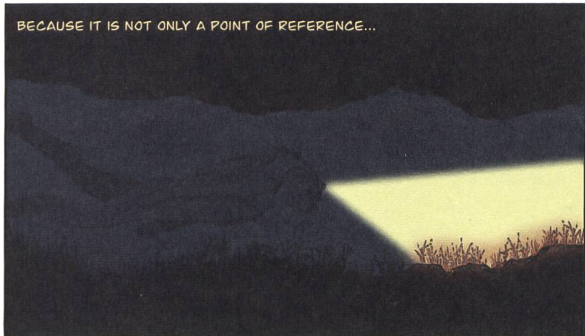
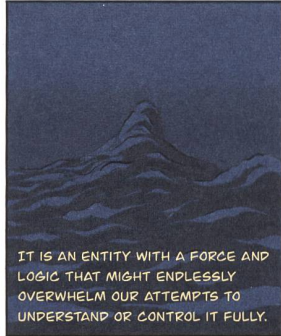
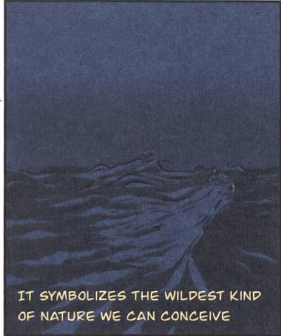


THAT'S ALL FROM MY SIDE, LET'S GO BACK TO THE STUD-



WAHIAWA ON O'AHU
5TH JUNE 2020, 10:18 PM
143 MAKAWEO AVE

THE OCEAN IS INTIMATELY CONNECTED TO THE HUMAN WORLD. IT PROVIDES THE ECOLOGICAL CONTEXT WITHIN WHICH WE AND ALL LIVING BEINGS ORIGINATED AND PERSIST. IT IS A MATERIAL THING THAT BECOMES MEANINGFUL ONLY THROUGH PERCEPTION, BELIEF AND ACTION.



INDUSTRIAL HARBOR OF O'AHU
5TH JUNE 2020, 11:58 PM
DEEP OCEAN