



Organisation Pour l'Utilisation de la Rosée

(Association Loi de 1901)

N°7 - April 2003

OPUR NEWSLETTER

"The dew of May fills the attics"

(popular saying of Causse de Blandas, quoted by J.P.Chassany in his book: Popular dictionary of Meteorology, Ed. Maisonneuve and Larose, 1989).

OPUR ANNUAL GENERAL MEETING

The Annual General Meeting of OPUR will be held in Pessac (Bordeaux University, France), on May 23, 2003 at 09:30 a.m.

The Meeting address is: ESEME - ICMCB, 87, Av. Dr. A. Schweitzer 33608 Pessac Cedex (France) - tel./fax: 33 (0)5 57 26 83 92).

All OPUR members are cordially invited to participate in our General Meeting. Members wishing to give an oral presentation, are requested to contact the OPUR Secretariat before 15th May 2003.

Members unable to take part in our meeting are requested to inform the OPUR Secretariat before 10th May in order that the Secretariat can finalize preparations and lunch. The Secretariat thanks you in advance.

OPUR IN CROATIA

Daniel Beysens and Iryna Milimouk went to Croatia in October 2002 to meet our Croatian correspondent, Marina MILETA. The goal of this trip was two-fold :

First, we initiated a project for dew condenser installation on the Adriatic coast, in particular on islands with a Mediterranean climate. One of the distinctive characteristics of these islands is the almost - total absence of sources of drinking water. This project will make it possible to compare the dew data with the condenser already established on the island of Corsica where the north Mediterranean Basin climate and weather conditions are similar.

Second, in Croatia there is a story of particular interest to dew collection that prompted OPUR to undertake this travel. A few months ago, OPUR received a letter from an Australian historian, Klaus Neumann. Klaus Neumann is currently writing up the biography of a German physicist and philosopher of



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the XXth century, Wolf Klaphake. Klaphake left Germany in 1935, and the documents concerning his activity before the 2nd World War remain incomplete, unknown or untraceable. According to certain testimonies, and his article "Practical Methods for Condensation of Water from the Atmosphere" (in Proceedings of the Society of Chemical Industry of Victoria, vol. 36, 1936, p. 1102), he built some atmospheric water condensers on the island of Vis, in Croatia, during the period 1920-1930. Klaus Neumann has some documents confirming the construction of such dew condensers, in particular a postcard, addressed to Klaphake in 1938 by his German friends, who, after having visited Vis, reassures their friend, Wolf Klaphake, on the destiny of his condensers.

The contents of this postcard and the article from the "Society of Chemical Industry of Victoria" were sent to OPUR. According to these documents, two atmospheric water condensers were built in the surroundings of the city of Vis. One was situated near the Franciscan church, near the seaside and the other condenser on a small island at the entry of the Vis bay. The latter condenser was visible from the George III English fortress, itself located on a cape at the entry of the Vis bay.

Research was carried out on the island of Vis. Some results were obtained with difficulty, but are encouraging:

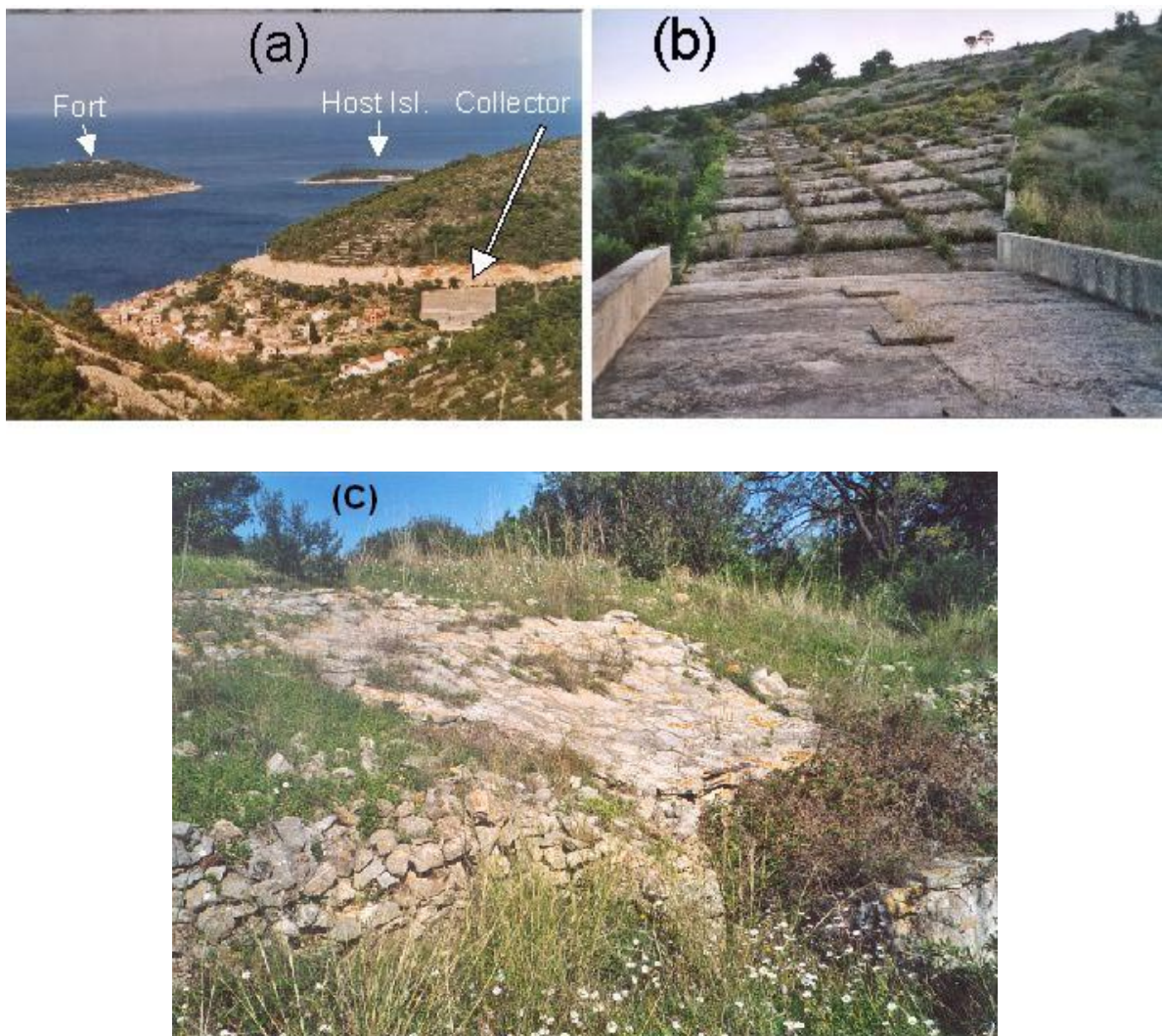
- The island of Vis (43°10' N, 16°10' E) is located in the south-eastern part of the country, in the Adriatic littoral, within 45 kilometers from the town of Split. It is the furthest island from the group of Central Dalmatian islands. Vis occupies a territory of about 220 km², with a mountainous relief. Its climate is dry and hot in the summer, wet and moderate in the winter. Dew is abundant. The island of Vis hosts two small cities, Vis and Komiza, and some small villages. The island of Vis has been a military site since the end of Second World War and only quite recently is it open to foreigners. During antiquity, the island was inhabited by the Greeks. The ancient name of Vis was Issa. The island does not have natural sources of water. The ancient inhabitants of the island built systems to collect atmospheric water (rain and presumably fog and dew) that were used till the beginning of the last century. Remnants can be found in the surroundings of Vis and on the site of the ancient Issa. Collectors are paved surfaces located on the side of the hills surrounding the town of Vis, collecting atmospheric water into cisterns. Cisterns are 3-4 m diameter and 3-4 m deep. A curbstone is present, made of very large stones (1 x 1 x 1 m), with one of the large stones hollowed out at the surface, probably to be used as a water reservoir for animals or as a sink.*



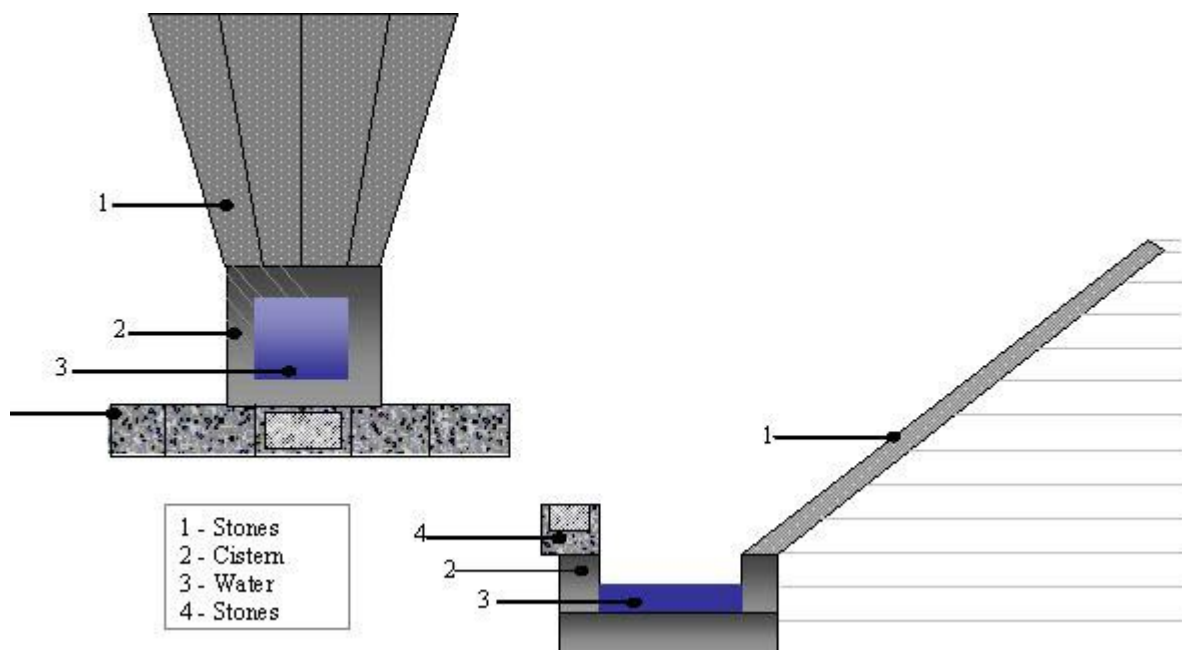
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D. Beysens, M. Mileta and I. Milimouk visited the museum of Vis (specially opened for this occasion), contacted some elderly inhabitants of the island, looked for possible witnesses of the aforesaid events and searched for the topographic locations of the places described in the old documents. The English fortress of George III and the Franciscan church were both located, which facilitated the identification of the probable site of the dew condensers.



Structures collecting atmospheric precipitation: (a) East of Vis city;
(b) in the middle of Vis island; (c) in the antique Issa



Schematic structures collecting atmospheric precipitation of Vis island

- *Mr. Jakov Matijašević¹, an inhabitant of Vis, born on 15 December 1914, and a contemporary of Klaphake, remembers well that a German (rare at that time), a very big man, 2 m height, with his wife, blonde and rather stout, using a boat of 4 m long, used to spend the summer in Vis during the 1920-30's. He set up devices to produce water from dew. Jakov Matijašević indicated the site of the condenser, behind the Franciscan church, a place corresponding to the postcard description. However he said that the construction was not as large as indicated in the Klaphake paper (= 50 feet or 15 m high). This condenser is the ancient Issa, mostly covered by kitchen-gardens, behind the discotheque of the Issa hotel.*

The second condenser should be located (according to the postcard) on the small island of Host, at the entry of the Vis bay. On the Host island is also located the lighthouse of Vis and the house of the lighthouse guard, now uninhabited.

¹ M. Jakov Matijašević, Lučko Brdo, Vis, Croatia. Born 15/12/1914.



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The site of Vis city: (a) general view; (b) the Host island; (c) the Vis bay

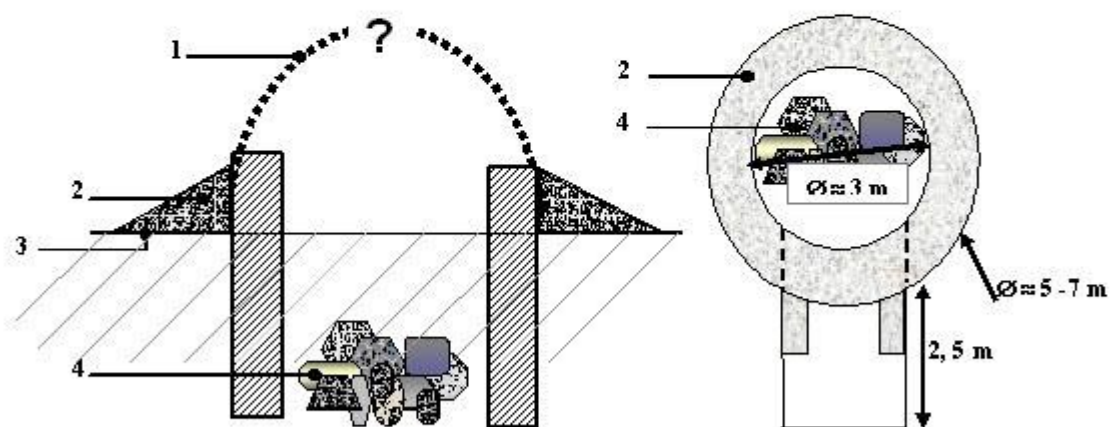
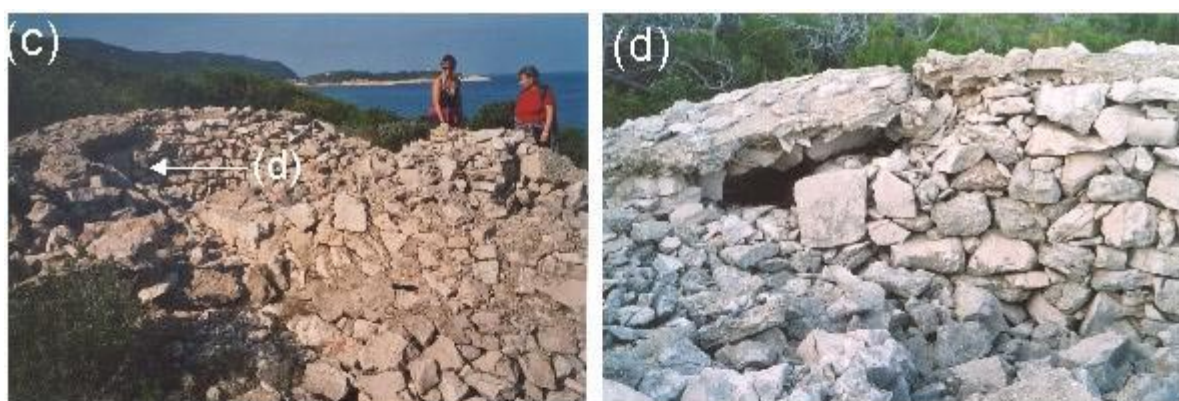
Both places were explored². At both sites similar remnants were discovered: circular stone constructions, joined by cement. The diameter is approximately 5-7 m. The only remains are the foundations. Two similar constructions, nearby the lighthouse, were found on the Host island. In one of the constructions a hole can be found at the base, as indicated in the Klaphake paper. The construction behind the church was recently cemented to make a cistern of it.

The constructions correspond roughly to the description of the article of "Chemical Industry of Victoria", but the dimension are much smaller. They seem to be the remnants of the Klaphake condensers³. The structures on the island of Host are indeed visible from the English fortress. The constructions

² During the nights of October 26-27-28, 2002, heavy dew was experienced. The soil was wet, and small water puddles were observed on the limestone rocks of the island.

³ Huts made with dry stone, without cement, are known to be constructed by the shepherds on Vis island. The dimensions are comparable. However, the shepherds did not use cement. The fact that cement was used in the ruined constructions would suggest they are the remnants of condensers.

also conform with the description of the Klaphake constructions as given by Jakov Matijašević⁴. All signs indicate that the ruins should be those of the Klaphake's condensers. Nevertheless, we do not have any documentary confirmation (photo, etc.).



- | |
|------------------------------------|
| 1 - Initial shape of condenser (?) |
| 2 - Cemented stones |
| 3 - Level of ground |
| 4 - Remains of the stones cut |

Ruins of condenser-like constructions. (c) condenser on the Host island, showing a hole (d) in the basement; schematic view.

⁴ According to Jakov Matijašević, the constructions of Klaphake were rather small. It should be noted that the ruins found were also small. They would correspond to condensers of maximum 5-7 m in diameter. The stones on the ground indicate that the condensers should be also 5-7 m in height. However, Klaphake indicates about 50 feet. Was it error or exaggeration? Or a typing error in the Proceedings of the Society of Chemical Industry of Victoria? A height of 5 feet (1.5 m) or 15 feet (4.5 m) would be more plausible.



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Other indirect evidence of Wolf Klaphake's presence on the island of Vis was found. As the postcard testifies, Mr. Klaphake came to the island in summer to visit one of his friends, Mr. Dojmi. Mr. Dojmi was apparently very wealthy. His palace still exists in downtown Vis, although occupied by other inhabitants, foreigners to the Dojmi family⁵. The estate behind the discotheque, on the Issa antique site, also belonged to him. We also found on Host Island the ruins of one of his homes, which confirms the hypothesis that his guests had easy access to this island.

ALWAYS IN CROATIA

The Second International Conference on Sustainable Development of Energy, Water and Environment Systems will be held in Dubrovnik (Croatia) from 15th to 20th June 2003.

OPUR and several OPUR members will attend and will give a talk entitled "Passive Radiative Condensers to Extract Water from Air".

RESULTS FROM THE PESSAC (BORDEAUX) DEW CONDENSER

A series of experiments in Pessac was recently completed.

The equipment was installed in the home of our President, Daniel BEYSENS, who, bleary-eyed and with great dedication, personally checked the condenser every day at dawn. He gathered the first dew of the day for chemical and bacteriological analysis, carried out at the laboratory of Hydrology of Aquitaine (Faculty of Pharmacy in Bordeaux).

Measurements lasted one year and made it possible to draw up a statistical table of the frequency of dew occurrence in oceanic geographical conditions. This frequency is extremely high in our area. Moreover, the chemico-bacteriological analyses showed an excellent quality of the dew water which, not only is drinkable (not having heavy metals or harmful chemical elements and average pH being equal to 6,3), but approaches according to its composition to the mineral water "Mont Roucou" ("Roucou Mount"), particularly recommended for babies.

Thus, it is possible to drink the dew water without any fear (on condition, however, to collect it in clean places and to handle it with clean hands). The future site of the experiment is to be decided.

⁵ It is interesting to note that we were contacted during our visit by one of the descendants of Mr. Dojmi, the count M. Nikolaï Dojmi de Frankopan, who stayed on the island of Vis in order to try to buy the old "palazzio" of his ancestors. He was interested by our investigation, and he invited us to look in his family archives.



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R.O.R. 2003

Project "R.O.R. 2003" (Network of Observation of Dew) was held from 01st March 2003 to 31st March 2003. The principal objective was to evaluate qualitatively the "Dew Layer" on a large scale: 7 Observers carried out a series of measurements every day of March 2003, on a standardized material and a common procedure of observations of dew and weather statements.

Observer	Site	Condenser size
Daniel BEYSENS	OPUR -33600 Pessac altitude - 50 m	S = 0,16 m ² S = 0,25 m ²
Marc MUSELLI	CNRS Vignola -20000 Ajaccio altitude - 150 m	S = 30 m ² 0,25 m ²
Elisabeth MAILLET	Les Contamines-38420 Revel altitude - 600 m	S = 0,25 m ²
Jean Paul RUIZ	Le Roc – 19130 St Aulaire altitude - 350 m	S = 0,25 m ²
Pierre ADMIRAT (+assistant)	38330 Saint-Ismier altitude - 375 m	S = 0,25 m ² Prototype S = 1,0 m ²
Patrice LOUBIERE (+ C. Canivet)	38660 St. Hilaire du Touvet altitude - 1050 m	S = 0,25 m ²
Jean-Phillipe CHASSANY	30200 St. Michel d'Euzet altitude - 68 m	S = 0,25 m ² Prototype S = 1,0 m ²

The standard condenser is a plane condenser of 0,25 m², covered with the new OPUR foil.

The condenser was laid out horizontally on the ground. The semi-quantitative evaluation of the dew was done by calibrated coding and comparison with the two quantitative condensers already installed on the sites of Pessac and Vignola. Climatological parameters: minimum temperature and relative humidity were measured on the sites, while the wind, cloud cover y and rain were the subject of codified observations. The program carried out the installation of the material and of the procedure at the end of February, the data-gathering occurred from the 1st to 31st March 2003. The analysis of the results will be carried out in April and will be presented in May during the next OPUR General Meeting.

(Information: tarimda@wanadoo.fr)



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COMMERCIAL SEMI-QUANTITATIVE CONDENSER CRSQ-250

One of the technical objectives of R.O.R. 2003 is the manufacture of a simplified, not very expensive condenser, that can be used not only by specialists and allowing, if possible, semi-quantitative measurements. The experimentation resulted in the development of a model of a flat and foldable condenser of 0,25 m² in area, which functions already at the 7 collection sites of R.O.R. 2003. In a commercial version, the semi-quantitative condenser of dew CRSQ-250 is now available (its price is to be decided), with a kit including a procedure, a scientific publication, a note about calibration, a computer file for recording data and 30 days assistance. This portable equipment, not very cumbersome, very easy to use, are calibrated to produce semi-quantitative results. It permits an individual to undertake a large variety of measurements in places with favourable geographical or weather situations, and to collect the dew samples for physico-chemical analyses (commercial information available from the Secretariat).

PRODUCTION OF OPUR FOIL

Despite the difficulties and according to an increasing request, OPUR succeeded to product an additional quantity of the foil for condensation. It is, of course, our polyethylene foil enriched by titanium balls, developed by one of our members, T. Nilsson.

This foil fabrication was carried out by the ATOFINA company. About 1300 kg (10 rolls of 100 m X 1 m) were produced and sent to OPUR during February. One part of this foil was already used in our various places of experimentation, in particular in Ethiopia, Israel and at various sites of R.O.R.

CINEMATOGRAPHIC PRODUCTION OF OPUR IN VOGUE

OPUR receives more and more requests from different countries of the world concerning our film "The Aerial Fountains of Feodosia", produced in 1996 during our third mission in the Crimea (Ukraine) and dedicated to our research of the dew condenser of the beginning of the XXst century.

The film was shown by the Ministry of National Education of Canada, by the Ancient History Faculty of the University of Colorado, the national chain



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of TV-Ukraine and during the last conference of the Archaeological Union of Bouches du Rhône (France), entitled "The water of our Hill".

It is also planned to be shown in the programming of Daedalus (Renewable Energy Technology of Greece) and of the Departmental House of the Environment (Prades Lez, 34, France).

All members who would like to have more information should check our website :

*http://www.opur.u-bordeaux.fr/angl/actions_artistiques_ang.htm
or write to the Secretariat of OPUR.*

OUR NEW MEMBERSHIPS!

**OPUR WELCOMES ALL OUR NEW MEMBERS WHO HAVE JOINED US SINCE THE
LAST GENERAL MEETING !**

Here are their names and contact info:

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For any additional information on the subjects of this bulletin, please contact the OPUR Secretary.

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