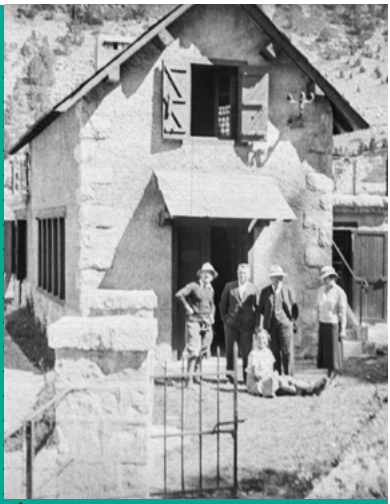
FOCUS

ORÉDON: A LAKE, A LABORATORY, A RESERVE



VILLES & PAYS D'ART & D'HISTOIRE

Lake Aumar and Néouvielle peak
© G. Besson - Pyrenees National Park

SUMMARY

Cover:
Les Laquettes © *Pyrenees National Park*
Henri Gaussen and his team at the Orédon laboratory
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An environment in need of preservation

"EVERYONE HAS HEARD ABOUT THE INTERESTING WORK THAT THE STATE IS CARRYING OUT AT GREAT EXPENSE ON LAKE ORÉDON. THEY WANT TO RAISE THE WATER LEVEL BY A FRIGHTENING NUMBER OF METRES, SO THAT THE AURE VALLEY WILL NO LONGER LACK WATER. A DAM WILL SOLVE IT ALL, EVEN IF IT DOES SPOIL THE LANDSCAPE, AND PERHAPS FLOOD SOME VILLAGES IN THE VALLEY AFTER A BIG STORM. IT IS VERY SERIOUS AND COSTLY.... BUT SCIENCE DESIRES THE USEFUL AT ALL COSTS."

Henry Russell

#1. GEOGRAPHICAL AND HISTORICAL CONTEXT

THE NÉOUVIELLE MASSIF IS A MASSIF IN THE PYRENEES MOUNTAIN RANGE LOCATED IN THE HAUTES-PYRENEES DEPARTMENT IN THE OCCITANIE REGION, IN FRANCE. IT IS 25.5 KM LONG AND 17 KM WIDE, IT CULMINATES AT PIC LONG AT 3,192M. DUE TO ITS CENTRAL POSITION AND THE NATURE OF ITS PLUTONIC ROCK, THE NÉOUVIELLE MASSIF IS PART OF THE AXIAL ZONE IN THE PYRENEES.

300 million years ago, Néouvielle granite was born from an intrusion of magma into the depths of the earth. Successive phases of erosion and uplift gradually exposed and shaped the passes and gaps located in the network of fractures in the granite.

But it was the Quaternary glaciers, a few tens thousands of years ago, that shaped the current landscape. The ice sculpted the granite into flat-bottomed cirques separated by "caterpillar" ridges, it dug the lakes and deposited the moraines. The shelter of a high ridge, from the Pic de la Munia to Arbizon, and the general exposure of the massif facing south, give the region a warmer and drier microclimate, which in turn prolonged their existence.

No other Pyrenean region better combines Atlantic fauna or flora with those of Mediterranean countries. The Néouvielle massif is one of the most important lake regions in the French Pyrenees. It is dominated by a winding ridge that separates the waters of the Adour and the Garonne. This ridge is dotted with peaks whose average altitude is around 3000m: Pic des Aiguillous 2960m, Pic de Campbielh at 3175m, Pic Long at 3192m, Pic de Néouvielle at 3092m. The lakes are distributed on either side of this line. It is in this geographical context that Lake Orédon is located. This lake, formerly known to shepherds as Lake Camou, is located on the Neste de Couplan river. Its natural spillway feeds the river. Before the first developments, it was a majestic 24 hectare lake more than 31 m deep.

Lake Orédon *© Pierre Meyer AE Médias*

#2. HUMAN IMPACT

MAN HAS ALWAYS TRIED TO LIVE OFF AND BENEFIT FROM THESE LARGE NATURAL SPACES. IN THIS LOCAL MOUNTAIN CONTEXT, NATURAL RESOURCES HAVE ALLOWED THE DEVELOPMENT OF AGRO-PASTORALISM, FORESTRY AND WATER RESOURCE MANAGEMENT.
FROM THE END OF THE 19TH CENTURY, TOURISM HAS BEEN DEVELOPING IN THE MASSIF. THE INCREASE IN HUMAN ACTIVITIES, AS WELL AS THE CONCERN FOR PRESERVING EXCEPTIONAL ECOLOGICAL RICHNESS, HAS CONTRIBUTED TO THE CREATION OF ONE OF THE FIRST NATURAL RESERVES IN FRANCE.

A. PASTORALISM

« This vast solitude, where the shepherd and his flocks can roam in complete freedom, seemed beautiful and imposing to me ».

La Boulinière descriptive and picturesque itinerary of the Hautes-Pyrénées Française -1825

From the Neolithic period, human presence has been proven in the Pyrenees. Studies of pollen and charcoal preserved in soils and peat bogs allow us to identify significant colonisation by herds in the last millennium BC.
It is through the study of the flora on grazing areas, such as plantain, that we have been able to date the beginning of human influence in the area to around 4000 BC. These plant markers of pastoralism were maintained until the end of Antiquity. This is a phenomenon that can be found in all the high mountain ranges of Europe.
Then began a period of deforestation, caused mainly by small pastoral fires and the presence of herds over generations, which eliminated young seedlings and destroyed the forests, with the disappearance of the fir tree in particular. In the 19th century, these summer pastures were very popular. Depending on the pastures, there were native or Spanish livestock. Thus, in 1885, the commune of Vielle-Aure rented its Néouvielle summer pastures to the Spanish. The herds were estimated at 6,000 sheep and 400 cattle. This was one of the main resources for the commune of Vielle-Aure. In 1912, the rental of the Néouvielle summer pastures to the Spanish brought in more than 2,000 francs (around €7,000). This strong pastoral pressure led to major changes in the environment: trampling, destruction of young shoots, slash-and-burn, building huts, etc. It was not until the second half of the 19th century that pastoral pressure began to subside. This decline in herd numbers was due not only to the rural exodus, but also to a restructuring of the local economy. Large urban centres became attractive to some young people, offering "easier" jobs in hydroelectricity, particularly at the time of the construction of large dams, and positions in state administrations.

Today the pressure is very different and the landscape is still changing, particularly around Lake Orédon. Faced with an increasingly low presence of herds, the pine forest is regaining ground. The lack of guarding causes a less balanced distribution of pastoral pressure from the herds, which always remain on the same areas of grassland, to the detriment of the moorland areas that are closing in.

1. Spanish mountaineers. Eugène Trutat
© MHNT.PHa.138.B46.0022

2. Picturesque journeys in the French Pyrenees. Antoine-Ignace Melling
© Haute-Bigorre Media Library - AP46

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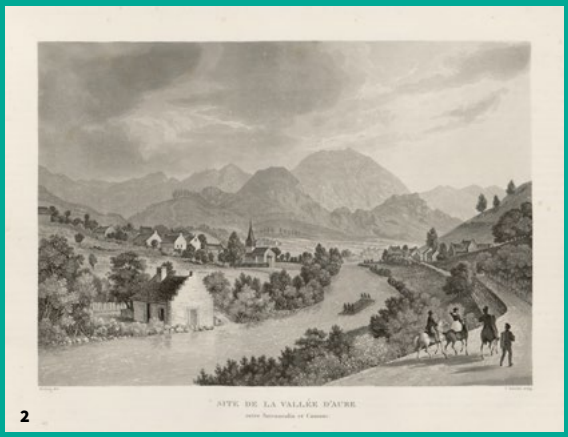

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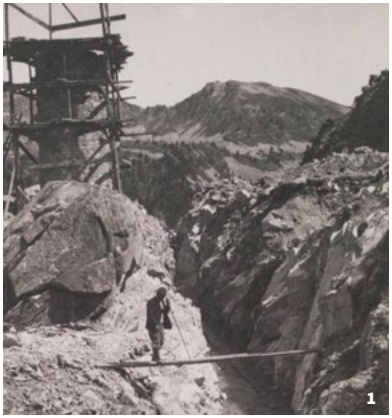
B. FORESTRY ACTIVITY

The latter has often been the corollary of pastoralism. The forest landscape of the post-glacial periods is quite similar to that of today. Around the lake, there are firs and pines that have to be observed. A little further down along the Neste de Couplan river, we find large trees benefiting from shade and humidity. During Antiquity, livestock farming diversified and the lack of pasture was cruelly felt, so large-scale attempts were made. Forests disappeared in favour of meadows, fields and pastures, the limits are stretched even further. In the Middle Ages, trees were cut down indiscriminately according to needs, whether to enlarge pastures, build houses or tools, heat or earn money for the community.

We have to wait for Colbert, who under the reign of Louis XIV, seeks to legislate. He inventories all the royal forests, in order to provide timber for masts. Village communities must then prove their property rights. Most of the forests are then recognized as royal and the inhabitants can only keep their usage rights subject to attesting to their age and limits. But the anarchy is over and exploitation rules are established in 1669 in the form of an ordinance. The Grand Master of Waters and Forests, Louis de Froidour, then comes to control the state of the forests. The management of the Couplan forest passes into the hands of the Navy, and it is Jean-Pierre Rigord (1656-1727), Navy commissioner in Marseille, who organises the harvesting. He even had a forest road built there in 1692 and equipped the launching corridors with guardrails so that the trees arriving at the bottom of the valley were not damaged.

Rigord was commissioned in his work in the Aure Valley by Michel Bégon, intendant of the Rochefort arsenal. The size and straightness of the trunks, combined with the dry climate ensured a superior quality of the wood from the Couplan Valley.
The former lieutenant of the Water and Forests Department, Mr. Laforcade then described: *« the forest there is of such a capacity, quality and quantity of trees, that the treaty for the mast can be easily exploited there, if the convenience of the country or the Neste river could allow it. »*.



1. Work on the Aubert lake dam.
Labouche collection © CD31/AD 31 FiPyrenéesTP003095

2. Lake Aumar
© Parc national des Pyrénées

In the following century, this exploitation continued, as Lucien-Albert Fabre (1852-1920), Inspector of Water and Forests, attests in his work "Restoration of the mountains and inland navigation in France". (Extract from a conference on navigability in France).

Quoting a notarial act by Bernard Bayon, notary in Saint-Lary, he tells us:
« On January 27, 1750, Alexis de Bellefond, commander of the Maréchaussée of Montréjeau, assisted by Messrs. Simon, Ramonnet and Dominique Gailhac, horsemen, went to the port of Saint-Lary to seize, on the orders of the Intendant, all the wood from the Couplan forest located on the ports of the roads from Saint-Lary to the Chapelle de Meybat, amounting to 354 pieces, consisting of varying cuts of wood. Bernardin Carrère and Guillaume Carrère, consuls of the place of Saint-Lary; Barthélémy Baqué and Joseph Soulé, consuls of the place of Sailhan; Gertoux, Coma, Jean Esquerre, Jean Curie, Bech, Meujoulet, Barberousse, Valencian, Castelbisné, inhabitants of Aragnouet were appointed sequestrators.»

The fall in timber prices, the rural exodus and the economic revival would protect these forests at the turn of the 20th century! Today, clearing felling (for public safety reasons or as a measure to manage the health of the trees) are still carried out in certain accessible sectors, but no more commercial felling.

C. WATER MANAGEMENT

Exploiting forest resources requires being able to transport logs. This mountainous environment does not make the task easy. For centuries, we were only told of poor roads that accessed the Couplan-Orédon basin. In the absence of roads, the transport of logs was left to water. To facilitate transport, dams were built in the 17th century to increase the flow. Once again, it is to Jean-Pierre Rigord that we owe the valves that close the spillway of Lake Orédon at the end of the 17th century.

Laboulinière describes the installations still visible at the beginning of the 19th century:
« Near the Couplan waterfall there were masonry ruins. Formerly, the Oule basin (old filled-in lake) was closed by means of locks to increase the volume of the Neste (river), according to the floating needs. The Lac de Camou (Lac d'Orédon) is hardly more than 6 metres wide and can be closed at will by sluices or gates. By this means, all the water it receives from the upper lakes and its original waters

increase the volume of the river, the effect of which is felt as far as Montréjeau. This process facilitates navigation on the river when the Aure Valley forests provide parts for the masts ».

We use this technique on lost logs from the lake to Saint-Lary. The lumberjacks intermittently open the sluice gates to carry the wood using the current and the drop: This causes a lot of damaged wood as well as damage to residential areas and the bridges! A memorandum from 1778 reports the claim for damages by an inhabitant of Aragnouet against B. Fornier de Saint-Lary who *« by transporting 5000 logs of an extraordinary size broke all the bridges over a long distance and the cattle could no longer return to the pastures ».*

Joseph-Bertrand Abadie, in his "Indicateur des Hautes-Pyrénées" (1856) writes:
« For the transport of timber, each lake provided at a given moment a considerable quantity of water and a whole cut left with prodigious speed to the place where rafts accomplished the last task, but this flood was so strong that it sometimes caused devastation and was felt even in Montréjeau ».

It was only in Saint-Lary that the logs were tied together, forming rafts, and were led by rafters to Montréjeau. However, some large firs were transported alone. What marked the end of fluvial transport in the valley was the construction of the Neste canal in the middle of the 19th century.

The Néouvielle became the water tower of the Gascony hillsides when this canal was filled with water in 1862. Its purpose was mainly agricultural. It was to supply the Gers rivers with enough water to facilitate the irrigation of crops. Soon enough, a simple input of water from the Neste was not enough and it was necessary to return to the large reservoirs of the Néouvielle massif. Thus, between 1869 and 1884, the first dam was built on Lake Orédon to increase its height by 17 m and to increase its content to 7,270,000 m3. In the years that followed and until 1902, two other lakes were developed to enlarge Lake Orédon, namely Cap de Long and Aumar. All of this work led to the widening of the paths into passable roads, as well as the construction of houses for the gatekeepers and technicians.

At the end of the 19th century, another revolution took place in Europe: rail transport had to be developed and the electricity fairy appeared. Here, everything was predestined to produce electricity and it was the “Compagnie des Chemins de Fer du Midi” that began building a hydroelectric power station in Eget. The latter was to be powered by extremely high waterfalls, themselves supplied by water from the Orédon and Oule lakes that were created with this in mind! The two lakes were connected to each other. These major works were carried out between 1912 and 1921. New carriageways and new huts were built.

After the war, other works to promote hydroelectricity were undertaken, mainly in the Cap de Long sector to supply the Pragnères power station in the Gaves Valley.

1. Hôtellerie d'**Orédon** *© Framboise Estéban*

2. Ski touring
© D. Moreilhon – Pyrenees National Park

D. PYRENEISM AND TOURISM

Just after the discovery of the Massif de Néouvielle, the entrance to it was rather via Barèges or Bagnères-de-Bigorre. Pyreneism at that time rhymed with thermalism. However, Lake Orédon was favoured by a certain category of "bathers": fishing enthusiasts! We know from various reports that fishing in Orédon was important.
It was a large supplier of trout for the thermal spas and an invaluable source of income for the people of Aurois. The latter are either the trout selling fishermen (the price of trout is very high on the thermal spa market), or the fishing guides bringing the spa guests to the banks of the lake. In either case, the lake had to be supplied with fish and a whole range of experiments carried out to develop the trout population.

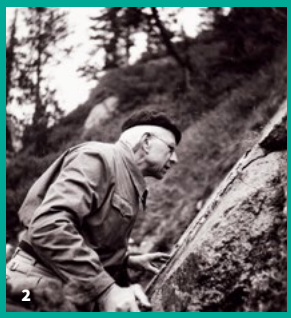
Old habits die hard, everyone wants to go up to Orédon. The construction of dams and carriageways made access easier. In 1913 a hotel was built above the lake by the French Alpine Club of Bagnères-de-Bigorre and the Touring-Club. It did not open until 1919 because of the war. Its luxuriousness helped it to attract a large clientele and not just mountain dwellers!

Over the years, access to Orédon has become easier. Hikers, holiday makers in the valley, the curious and romantics all come together here.

Since 1969, real mass tourism has been flocking to Orédon, due to the construction of the "lakes road" as we know it today. In the mid-1970s, alarm bells sounded and a more environmentally friendly management was put in place. This took shape with the development of the "Orédon, Porte du Néouvielle" project in 1994. Development work for better flow management took place between 1996 and 2000.

"IN ECOLOGY, THE BEST LABORATORY IS STILL THE FIELD. WITHOUT WISHING TO DENY THE INDISPUTABLE INTEREST OF CERTAIN "IN-ROOM" EXPERIMENTS, WE THINK THAT WE MUST FIRST OF ALL BRING ECOLOGICAL ZOOLOGY OUT OF THE LABORATORIES WHERE IT SOMETIMES STILL REMAINS LOCKED UP."

Paul Cassagneau 1960



1. Henri Gaussen and his team in the mountains.
© CD31/AD31/20FiALBUM0000210011

2. Professeur Vandel out in the field.
© The Orédon Reserve archives

3. Professeur Vandel with his students.
© The Orédon Reserve archives

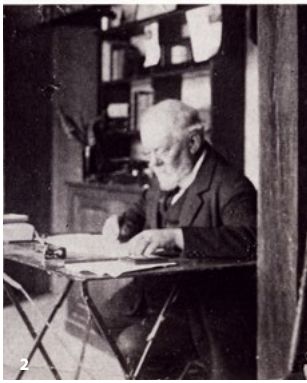
#3. ORIGINALLY A FIELD BIOLOGICAL LABORATORY

IN 1923, THE UNIVERSITY OF TOULOUSE FOUNDED THE ORÉDON BIOLOGICAL LABORATORY OF THE HYDROBIOLOGY INSTITUTE OF THE FACULTY OF TOULOUSE AT AN ALTITUDE OF 1,851M ON THE EDGE OF LAKE ORÉDON. ITS CONSTRUCTION WAS FACILITATED BY THE ADMINISTRATION OF BRIDGES AND ROADS.

Its creation was driven by Professor Léon Jammes, director of the Institute of Hydrobiology and Fish Farming at the University of Toulouse and a zoology teacher. At that time, the connection between Fabian and the laboratory was via a cart track. The studies focused on high mountain biological phenomena and more particularly on research in limnology, that is to say the study of physical and biological phenomena relating to lakes. The laboratory was open only during the summer months of July and August. The premises were cramped and life seemed more like that of a mountain refuge than a laboratory. As early as 1928, Professor Jammes highlighted two major advantages of this laboratory: first of all, it « lends itself to teaching and becomes a magnificent instrument in the course of things » and secondly, « it promotes biological research of all kinds which until now, due to the lack of a fixed centre, had no"t been possible ».

By 1931, the premises were too cramped and the building was extended by a wing, increasing it from 48 to 123 m^2. The equipment remained very basic: folding garden tables and chairs, and no running water.
The same year, Professor Jammes left his position as director to Professor Despax, a great specialist in animal hydrobiology (fish, amphibians, aquatic insects). He remained at the head of the laboratory until 1946, even though it remained closed during the war period and the few years that followed. It was not until the summer of 1948, under the leadership of Professor Albert Vandel, that the laboratory resumed normal activity. An important event took place in Orédon in July of the same year: the second part of the extraordinary meeting of the Botanical Society of France. No fewer than 80 botanists took part in the event!

From 1950, A. Vandel took over the management of the Laboratory. This brilliant professor of zoology at the Toulouse faculty, participated at the same time in the creation of the underground laboratory of the C.N.R.S in Moulis (Ariège). His scientific work extends to many fields such as life in the underground world, prehistory, etc. From 1957, A. Vandel gave way to Eugène Angelier, professor of ecology, specialist in limnology. His primary desire was to reopen the chair of hydrobiology at the University of Toulouse and to refocus the Orédon laboratory on hydrobiological studies. He launched a research team on invertebrate



fauna and more particularly aquatic and terrestrial microfauna in the reserve and its surroundings. In 1964, an annex to the laboratory was created in Vielle-Aure where Professor Angelier settled. From 1965, he maintained a team of eight hydro-biologists to study the problem of the productivity of high altitude running and stagnant waters, the main conclusions of which can be found in his manual "Ecology of Running Waters". Thus, from 1967, the laboratory joined the International Biological Program, under the leadership of UNESCO, and was part of an international study of the production of the earth and the oceans. In this context, several doctoral research projects were launched thanks to a significant increase in funding.

Henri Descamp, a CNRS researcher at the laboratory in the 1960s, tells us:
« *We would go up at the end of May - beginning of June and stay until the first snow, but we would sometimes go up in winter wearing snowshoes. We would go up on foot by the track and, exceptionally, we would sometimes go up by helicopter. It was a life in the field, as researchers, as students, a life of camaraderie in a good atmosphere. There were an average of 5 to 7 researchers but sometimes with the students there could be up to 20 of us. In addition to the laboratory, there was a large living room, bedrooms, and a library full of detective novels, especially San Antonio! In the evening, we would sing, tell stories, and do readings.*
Every week, we would go down to Arreau or Lannemezan to do the shopping, we had our own stores. »

The research would continue in Vielle-Aure, but in 1975 the Orédon laboratory closed its doors. The one in Vielle-Aure, set up in the old town hall, closed in 1992. Today, observations and research continue to be carried out by scientists in partnership with the Pyrenees National Park. Laboratories are now only in universities.

1. Daily life
for students in the laboratory.
© The Orédon Reserve archives

2. Léon Jammes,
founder of the laboratory
© The Orédon Reserve archives

"AFTER PROFESSORS JAMMES AND DESPAX, PROFESSOR ANGELIER HAS RENEWED ALL OF THE MODERN BIOLOGY OF MOUNTAIN FRESHWATER HERE BY THE IN-DEPTH STUDIES THAT HE WAS ABLE TO CARRY OUT THANKS TO THE PROTECTION OF THE RESERVE AND NOW WITHIN THE FRAMEWORK OF THE NATIONAL PARK, ON THE SEASONAL EVOLUTION OF THE BIOMASS OF LAKES AND STREAMS"

Pierre Chouard, 1971

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1. Studies on Lake Orédon - 1954
© The Orédon Reserve archives

2. Students with Professor Vandel - 1954
© The Orédon Reserve archives

#4. ORÉDON: A CRUCIBLE FOR RESEARCH

THE CREATION OF THE C.N.R.S IN 1939 AND THE NATIONAL DESIRE TO BOOST THE RESEARCH EFFORT AFTER THE WAR LED TO A STRONG DEVELOPMENT OF THE LABORATORY'S ACTIVITIES. PROFESSORS VANDEL THEN ANGELIER DRIVE A SIGNIFICANT DYNAMIC AND CONTRIBUTE TO THE MODERNIZATION OF THE LABORATORY.

This post-war period saw many students pass through the laboratory. They are joined by Parisian interns who, under the leadership of Angelier, come to train in field ecology. They are oriented towards the study of different disciplines or groups of animals, covering the broad spectrum of aquatic and terrestrial mountain microfauna. The days follow one another with long field sessions, leaving at dawn and returning in the afternoon. The end of the days are devoted to laboratory work, determinations and sorting.

It is in this context that multidisciplinary research teams are born. These teams forge working relationships within the Auroise mountains that will last for many years beyond Orédon, mainly at the University of Toulouse. They form a group of united researchers who have considerably advanced knowledge of aquatic and terrestrial biology at altitude in the second half of the 20th century. This team spirit is also built on the material conditions that impose a daily life where everyone must take part in collective tasks.

The equipment necessary for the research is transported on foot, then on donkey back, thanks to the acquisition of Pégase, "the only donkey in the university" according to Professor Angelier!

« For the transport of the equipment, there was an essential character: the laboratory donkey! The first thing you had to learn when you arrived at the lab was how to saddle a donkey, something that was not very easy. At the end of the season, the brave beast would go down to spend the winter in Eget! » (Henri Decamp)

Sorting and inventorizing at the Orédon laboratory.
Gaussen collection ©AD/CD3121FiNV000784

#5. THE LABORATORY'S SCIENTIFIC CONTRIBUTIONS AND WORK IN PROGRESS

THE LABORATORY'S ACTIVITY HAS GENERATED A CONSIDERABLE NUMBER OF PUBLICATIONS AND THE RESEARCH CONTRIBUTIONS ARE REMARKABLE IN VERY MANY AREAS.

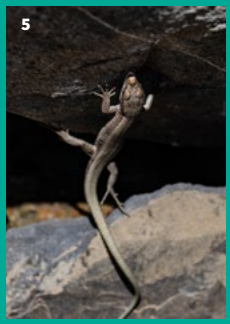
If we add together the work carried out in the laboratory itself, those implemented in the perimeter of the Néouvielle Nature Reserve and the research undertaken by researchers and students trained in the Orédon laboratory, we are struck by the number and diversity of the disciplines covered and the scientific publications.

Notable results have been published on climate, geology, geomorphology, pedology, the impact of human activities, lakes, aquatic fauna (500 species), running waters, aquatic vertebrates (11 species), terrestrial invertebrates (1152 species), terrestrial vertebrates (88 species), flora (70 species of vascular plants, 372 species of algae, 58 bryophytes, 3 lichens, etc.). Between 1961 and 2012, more than thirty theses were published on the territory.

The Néouvielle National Nature Reserve has become a major site for the study of the mountain pine since the work of Henri Gaussen in 1923 until the latest studies by Renaud Cantegrel in 1983. This remarkable site allows the observation of local forest species and hybridization phenomena with the Scots pine.

The peat bogs on the site have been the source of much research in geobotany and phytosociology, notably by Pierre Chouard since 1930. From 1974 with G. Jalut and until 2001 with J.M Belet, the fossil pollens from the peat bogs have enabled the development of important work for the study of the history of the climate and the evolution of the plant cover since the end of the last glacial episode.

Today, the research and monitoring activity continues and work continues to be part of the prestigious history of the laboratory. Flagship species, sentinels of biodiversity, are studied in detail on the site, such as the Pyrenean subularia aquatica. A partnership involving the Pyrenees National Park, the Néouvielle National Nature Reserve, the National Botanical Conservatory of the Pyrenees and Midi-Pyrenees, the ECOLAB, GEODE and EDB laboratories of the University of Toulouse, is making it possible to develop a research project to identify the causes of the decline of the species in the small lakes. In parallel, a conservation protocol could make it possible to strengthen existing populations if necessary. The Bonnal lizard, a reptile endemic to the alpine level of the Pyrenees, is also



the subject of an in-depth study. Global warming is endangering this species that lives between 1,700 and 3,000 m above sea level, due to the loss of its habitat and the increase in the numbers of the common wall lizard. It has therefore undergone a long-term monitoring programme which started in 2000 at the Aubert dam. Since 2021 a new protocol has been put in place to observe the effects of climate change on the altitudinal distribution of the species.

Other studies have been set up in partnership with the Pyrenees National Park: monitoring plant species (Pyrenean androsaces), animals (chamois, calotritons, capercaillies, midwife toads, ibex, etc.), the impact of the arrival of emerging diseases on amphibians and the monitoring of their environments (peat bogs, lakes) in the context of climate change.

1. Midwife toad
© C. Cuenin - Pyrenees National Park

2. Ibex *© A. Garnier - Pyrenees National Park*

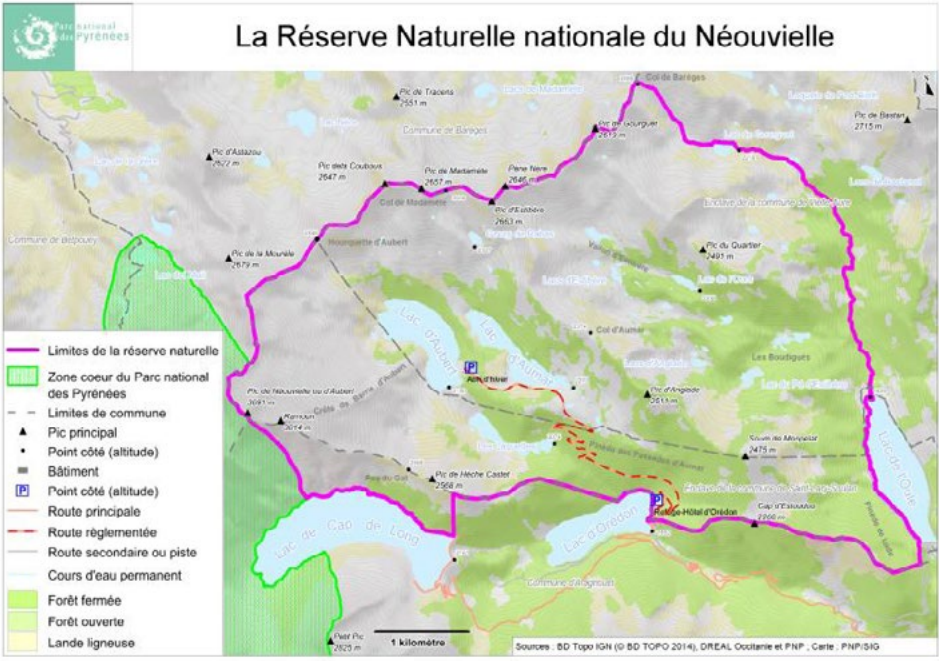
3. Aquatic subulars
© J. Garcia - CBNPMP

4. Calotriton *© S. Rollet - Pyrenees National Park*

5. Bonnal lizard
© C. Cuenin - Pyrenees National Park

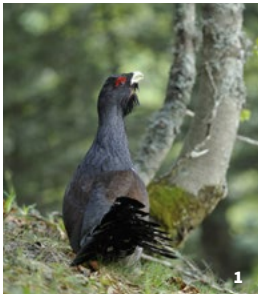
#6. THE NÉOUVIELLE NATIONAL NATURE RESERVE

ONE OF THE EFFECTS INDUCED BY THE LABORATORY WAS THE CREATION OF THE NÉOUVILLE NATURE RESERVE, SUPPORTED BY PROFESSOR CHOUARD IN 1935. THE INITIAL PROJECT OF THE FOUNDING FATHERS (P. CHOUARD, L. JAMMES AND H. GAUSSEN) WAS, IN 1933, TO CREATE A NATIONAL PARK BETWEEN CAUTERETS, GAVARNIE AND LE NÉOUVIELLE, FORMING THE COLUMNOF THE ORDESA NATIONAL PARK CREATED IN 1918.



Faced with the reluctance of the administrative authorities, the cost of the operation and some local opposition, the project was quickly revised downwards in favor of the creation, in 1935, of a reserve of the Société d'acclimatation de France. This reserve was facilitated by the fact that this territory belonging to the commune of Vielle-Aure, was rented for the use of the Spanish herds of the Gistain Valley, it was therefore possible to replace the tenants against an appropriate fee, without the local population having to

1. Capercaillie
© Pyrenees National Park
2. Peat bogs of Gourg de Rabas
© Pyrenees National Park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suffer. Several elements contributed to the acceptance of the project. The Arazas Valley on the Spanish side had just been classified as a National Park, which brought it more visitors, tourists and scientists each year. The foresters had started to put sectors under protection in order to protect them from overexploitation and encourage natural regeneration.
In the Aure Valley, the Central Association for the Development of the Mountains, under the supervision of Mr Descombes, rented land in the communes of Aragnouet, Vignec, Vielle-Aure in order to carry out reforestation actions. It was also in the same years that a push for the protection of nature was initiated under the impetus of the State (law of May 2, 1930 which ensures the protection of natural monuments and sites of artistic, historical, scientific, legendary or picturesque character), the Natural History Museum, the National Society of Acclimatization, the Society of Biogeography…

At the same time, Louis Lebondidier, founder of the Pyrenean Museum in Lourdes, succeeded in having the Gavarnie site classified. Henri Gaussen, meanwhile, travelling the Pyrenees to study the Saore, showed the need to create a Nature Reserve in connection with the Arazas National Park. Finally, in 1923, Professor Jammes founded the biological laboratory of the University of Toulouse in Orédon. Thanks to him, local fauna and flora were increasingly better understood and the need to set up protection for the exceptional wealth of Néouvielle had also emerged in the team of scientists in the laboratory.

This was a first in the Pyrenees and in France, as regards the association of a research laboratory and the creation of a reserve in a vast area. It is also necessary to mention the fortunate intervention of the mayor of Vielle-Aure, Doctor Salles, who quickly understood the importance of this Reserve. The Société Nationale d'Acclimatation de France, which had already supported the project of the very first Nature Reserve in France in Camargue, supports the classification as a reserve and ensures its improvement.

The snow valley of Soum de Montpelat
1936 *© H. GAUSSEN ;* 1984 and 2022 *© J.P. METAILIE*

#7. NÉOUVIELLE®
LANDSCAPES EVOLVING WITH A CONQUERING PINE GROVE

THE SETTING UP OF THE LABORATORY AND THE SETTING UP OF A VAST TERRITORY AS A RESERVE ALSO ALLOWED THE STUDY OF THE EVOLUTION OF LANDSCAPES. IN THE 1820S, LA BOULINIÈRE HEADED TO THE NÉOUVIELLE MASSIF AND ITS LAKES, WHERE HE SAW, AS IN THE COUPLAN VALLEY, "VAST LAWNS" AND "SCATTERED TREES".

Transhumant herds exerted strong pressure there until the beginning of the 20th century. Today, the decline in pastoralism favours colonisation by ericaceous moorland and pines.
The attacks of honey fungus and the ageing of the pines give a degraded appearance to the woodland, although it is an extremely lively forest where regeneration is very active. Dead standing trees remain in place for many years. They contribute to the reception of biodiversity with the installation of lichen, the presence of saproxylic insects and the shelter for many species such as woodpeckers and other birds taking advantage of the lodges to nest.

« To the South and East, its edges, with a gentle and accessible slope, are covered with grass, and have a few pines, signs of beautiful vegetation, which time, or rather the hand of man has destroyed. »
La Boulinière, 1825, *Descriptive and picturesque itinerary of the French Hautes-Pyrénées.*

La soulane du Soum de Montpelat (between 2,200 m and 2,475 m above sea level) has experienced spectacular dynamics since the end of the 1990s, when climate change and the reduction in pastoral pressure have played an important role.

In the 1930s, it was an exposed snow valley with a steep slope, where the late persistence of the snow only allowed the existence of Gispet in different areas. At the beginning of the 1980s, we could see an advance of the Callune in the lower part of the slope, but without pine seedlings. The first pines appeared in the 1990s and since then, their expansion has been very rapid and should accelerate.

Wetlands, peat bogs and marshes - Ile Lake
© C. Cuenin - Pyrenees National Park

#8. AND TOMORROW...

The Néouvielle massif is an exceptional site both in terms of knowledge of mountain environments and the extraordinary wealth of its natural and cultural heritage. However, it must face the impact of intensifying climate change and the development of new outdoor activities that could weaken the balance of natural environments and the great ecological wealth it contains. The State, local elected officials and the National Park must continue to implement balanced management that respects the great wealth of this site by ensuring optimum cohabitation between human activities and the preservation of heritage.

It is also one of the areas that has been most studied in the French mountains and whose scientific work represents a remarkable heritage. Due to this knowledge accumulated over the long term, the Néouvielle could constitute a national reference site for monitoring the impact of climate change and changes in human activities.

Several programs are already in place (monitoring of high-altitude lakes, monitoring of Bonnal lizard populations, etc.) or are being implemented (monitoring of insect parades and aquatic vegetation, ORCHAMP-monitoring of the dynamics of biodiversity and mountain ecosystems).

The new constraints weighing on the Néouvielle such as the change in living conditions induced by climate change require continued increased vigilance and effort. One of the objectives is to aim for the resilience of the habitats and animal and plant species that constitute its singularity and its wealth clearly recognized yesterday, today and undoubtedly, tomorrow.

THIS SITE HAS ALL THE ASSETS TO CONTINUE THE LONG SCIENTIFIC HISTORY OF THE ORÉDON LABORATORY.

Sunrise over the Néouvielle
© C. Perrin - UP! Graphic Studio

«THE WORLD IS NOT A PETRI DISH. IT'S NOT ON A MICROSCOPE SLIDE. IT'S A STREAM. IT'S AN OCEAN. IT'S A LAKE. IT'S A MOUNTAIN. IT'S A PARK. THIS IS WHERE ALL THESE THINGS ACTUALLY HAPPEN, RIGHT UNDER OUR NOSES .»

Alejandro Sánchez Alvarado, 2022.

This brochure was produced as part of the 100th anniversary of the Orédon laboratory, in partnership with the Pyrenees National Park and the Pays d'art et d'histoire des vallées d'Aure et du Louron.

The Pays des vallées d'Aure et du Louron national network of Towns and Countries of Art and History.

The Ministry of Culture, Directorate General of Heritage, awards the label towns and Countries of Art and History to local authorities that animate and promote their heritage.

It guarantees the competence of tour guides and facilitators of architecture and heritage and the quality of their actions. From ancient remains to 21st century architecture, towns and countries showcase heritage in all its diversity.

Today, a network of more than 200 cities and countries offers you its know-how throughout France.

Nearby
(in the Occitanie region and on the Pyrenees massif) :

Bastides of Rouergue, Cahors, Figeac, Grand Auch, Millau, Moissac, Montauban, Oloron-Sainte-Marie, Cathar Pyrenees, Catalan Valleys of Tech and Ter, Dordogne Valley Lotoise benefit from the designation of cities and Countries of art and history.

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