

Zeitschrift: Swiss pioneers of economics and technology
Herausgeber: Association for Historical Research in Economics
Band: 1 (1957)

Artikel: Daniel Jeanrichard (1672-1741) : founder of the Jura watch industry
Autor: Mestral, Aymon de
DOI: <https://doi.org/10.5169/seals-1091175>

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Swiss Pioneers of Industry and Technology



DANIEL JEANRICHARD

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PUBLISHED BY
THE INSTITUTE OF ECONOMIC RESEARCH
ZURICH (SWITZERLAND)

A NATION'S MOST VALUABLE ASSETS

are its prominent citizens; their achievements and unique example lead to higher standards of development. To draw a lively picture of such great men means not only to honor them, but to incite a flame of stimulating energy.

(Gottfried Keller, 1883)

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Swiss Pioneers of Industry and Technology

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AYMON DE MESTRAL

DANIEL JEANRICHARD

Founder of the Jura Watch Industry

1672—1741

Published by
The Institute of Economic Research
Zürich, 1957

Published by the Institute of Economic Research:
Dr Hans Rudolf Schmid, Jenatschstrasse 6, Zürich 27, Switzerland
under the patronage of
Société Générale de l'Horlogerie Suisse S.A. (ASUAG), Bienne and Neuchâtel
Translated from the original French
by Douglas J. Gillam, M. A., F. I. L.
Designed by Otto Schmitt, Zürich
Printed by AG. Buchdruckerei Wetzikon
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P R E F A C E

In its quest for ever-greater precision and perfection, which has been going on for about two and a half centuries, the Jura watch industry has expended a wealth of ingenuity and has been amazingly successful in overcoming seemingly insoluble problems. This is evidenced by the story of Daniel JeanRichard and his collaborators and successors, thanks to whom the Swiss watch is known today all over the world.

Most of our schoolchildren still imagine that the Swiss watch industry had its beginnings in the workshop of that genial young locksmith or iron-worker at La Sagne. But the truth is rather different: it is more complex, yet no less surprising. It is well worth while, now and again, to recall the beginnings of the watch industry, just as a city or a country cherishes the memory of its founders, if only to gain a clearer understanding of the difficulties they had to overcome, and to take inspiration from their example. There is always a man at the back of the most complicated mechanism and the most elaborate machine.

Historical research has given us a clearer idea of the modest, yet decisive, part played by Daniel JeanRichard and his descendants in the organization and development of watchmaking in the Jura. We wish to express here our sincere thanks to the archivists, publicists and eminent technicians who have made available to us their erudition, advice and experience, thereby greatly facilitating our task. — Our intention here is simply to offer a new picture, based on the latest knowledge, of a pioneer, and at the same time of a social class, whose influence on the economic development of our country has been so decisive. We have taken as our guiding principle a saying of Alexandre Vinet's: "The present, for us, is the past."

BURNING THE CANDLE AT BOTH ENDS

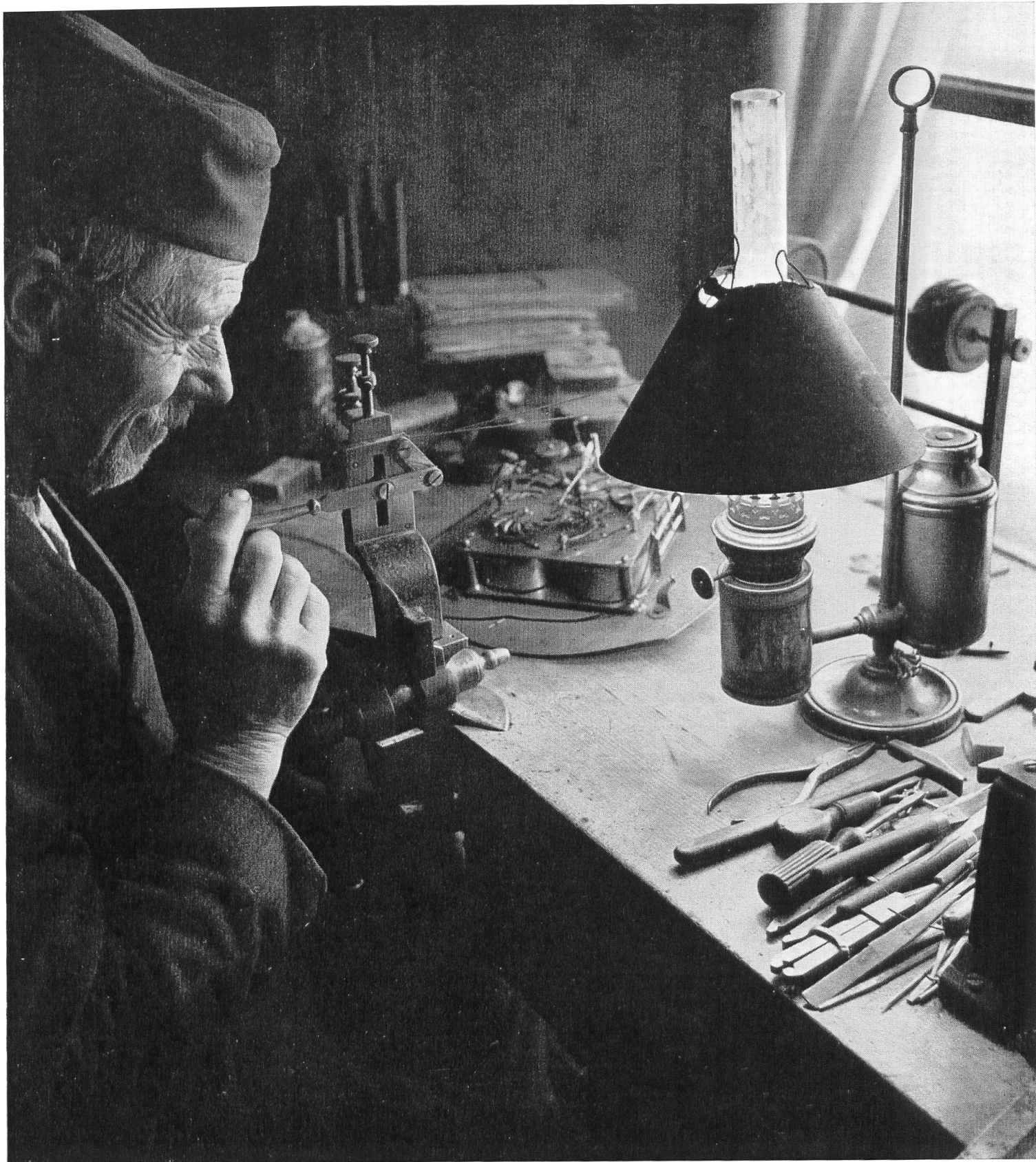
For many centuries, the inhabitants of the Neuchâtel Jura led lives as rough and adventurous as those of the first settlers in the New World. They were not discouraged by the hard climate, the loneliness of the "tragic, familiar" mountains, the appearance of wolves in winter, or the arrival of tramps and robbers. These settlers of the "Noires Joux", as the fir-forests of the Jura were called in former times, were great hunters; they excelled in the breeding and sale of livestock, and their horses and timber were traded on many a far-off market. Tenacious tillers of their barren soil, the "Montagnons" made it bring forth barley, rye and oats, as well as a few fibrous plants and vegetables. They lived either in lonely farms whose thick walls gave them protection from the cold and from the prying eyes of their fellow men, or in isolated hamlets, called "voisinages" ("neighbourhoods"), among the peat-bogs and marshes.

In 1372, the Count of Valangin had granted rights of franchise to their ancestors, to encourage them to settle in these inhospitable regions. Jealous of their liberties, these peasants were always deeply conscious of their status as free men. In a country where winter lasted for six months or more, these peasant craftsmen made a virtue of necessity; they had a natural gift for making things. Rising at cock-crow, they worked as they pleased, each in his own way, using a plane or a hammer as skilfully as a lathe or a pitchfork. In the intervals that remained after tending the cattle and doing small jobs in their simple workshops or forges, many of them practised a regular trade, often on a whole-time basis, and became gunsmiths, locksmiths or toolmakers; others worked as carpenters, joiners and cartwrights. They often liked to go to the great fairs that were held in the neighbourhood or even at places far from home; they offered hospitality to refugees, especially the Huguenots, and loved to talk with the pedlars who called at their farms. These mountain-dwellers distinguished themselves in many campaigns in which they fought side by side with the Swiss Confederates. Despite their isolation, the people of the Neuchâtel Jura have always striven to maintain their contacts with the outside world.

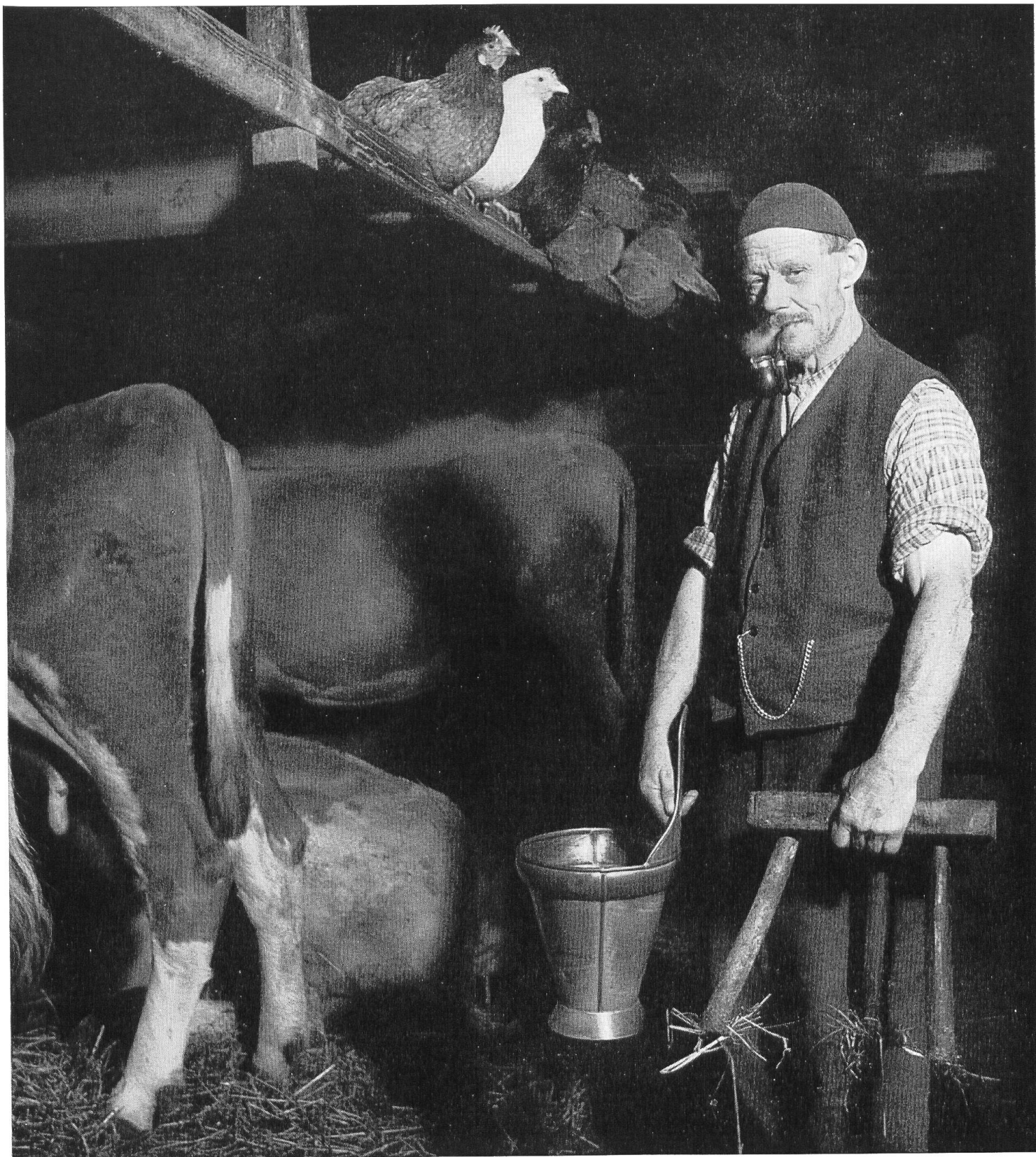
As is usually the case at this stage of civilization, the women took their full share of the work, responsibility and risk assumed by their menfolk. To illustrate this, we may quote a story that may be either historically true or a mere legend. In 1476, when their husbands were away from



This Jura farm under the snow recalls the rough, austere environment in which Daniel Jean-Richard grew up.



An old watchmaker, with his green-shaded oil lamp and his own tools. There are still a few craftsmen of this kind in the valleys of the Jura.



Like this hardy peasant-watchmaker, the young Daniel JeanRichard divided his time between the cowshed and the workbench.



Inscription above the front door of the Nicolets' house at Les Trembles: "1656. The holy blessing of God shall remain eternally. D.I. R.B." (Daniel JeanRichard-dit-Bressel.)

Below: the quiet, sunlit façade of the old family farmhouse.



home, the women of Crêt-Vaillant, above Le Locle, took up arms against a band of Burgundian robbers and, with the help of an angry bull, put them to flight. In those days, the woman was the head of family and farmstead alike. She would spend her long evenings working by candlelight, spinning or helping her daughters at their lace-pillows, while her husband would work with his tools, read, discuss foreign travel or politics with his friends, or make fools of the neighbours.

This rough, patriarchal existence has produced a race of independent, enterprising, observant and inventive men. The seed of watchmaking could hardly have fallen on better soil. Taking root among these people, it soon brought forth a harvest that gradually transformed the entire character of the country.

THE JEANRICHARDS

It was in this active, individualistic environment that the JeanRichard family appeared about the middle of the fifteenth century. They settled first at Entre-deux-Monts, near La Sagne; later, they moved to Les Bénéciardes, on the hillside overlooking the valley of Le Locle. After some time, one branch of the JeanRichards — the one to which Daniel JeanRichard belonged — added the suffix “dit Bressel” (the name of an allied family) to its double name, to distinguish it from the other branches of this prolific tribe. Beginning as smallholders, they gradually managed to extend their lands by purchase and exchange.

The first to break away from ancestral tradition was Daniel’s paternal grandfather, the magistrate Jehan JeanRichard. In addition to his property at Les Eplatures, Les Bénéciardes and Cernil-Bourquin, he acquired by marriage some vineyards at Auvernier and at Boudry; until his death, he held office as civil registrar and deputy mayor of La Sagne.

Daniel’s father seems to have been a respectable farmer and forester. His name would no doubt have been left unmentioned, had not M. Marius Fallet, a scholar of La Chaux-de-Fonds, seen in him an unsuccessful and somewhat romantic gunsmith, and related for us his adventurous career. The theory is quite plausible in itself: many a watchmaker of today may claim to be descended from craftsmen who worked as locksmiths or gun-

smiths. Attractive as it is, and in spite of the data on which it is based, this theory is however regarded with scepticism by the official archivists and historians of Neuchâtel. The confusion, if confusion there is, between two different persons, either of whom may have been Daniel's father, is due to the fact that each of them was named David, and that each of them was married to a woman named Suzanne. Moreover, each of these two Davids, who happened to be cousins, had three sons named Daniel, Abraham and Jean-Jacques. It may be added that here were about as many JeanRichards in and around La Sagne as there are Rochats and Meylans in the valley of Joux today.

FIRST STEPS

For a future watchmaker, for whom precision is the supreme principle of his craft, it is distressing enough that there is no certain information as to the identity of his father. As if this were not enough, the historians disagree as to the date and place of Daniel JeanRichard's birth. The banneret Osterwald, of whom we shall speak later on, tells us that he was born at La Sagne in 1665. M. Marius Fallet, on the other hand, produces documentary evidence to support the view that he was baptized on the 28th November 1670 at Morat, where his father was living as a political refugee. Other Neuchâtel historians hesitate between 1670 and 1672, regarding the latter as the more probable year of Daniel's birth at La Sagne. To make things worse, the register of baptisms that was kept at La Sagne was destroyed by fire in 1685.

Whatever may be the truth as to his date and place of birth, Daniel JeanRichard joined in the work and play of his neighbours' children, one of whom was his future wife, Anne-Marie Robert, of Les Bressels. This lost hamlet paid tithes to Les Bénéciardes, which belonged to La Sagne. One point has aroused the curiosity of the historians: in the deed of settlement drawn up shortly before his death, Daniel's paternal grandfather refers to "a ewer and a clock". This was probably an iron domestic clock of the kind that was coming into use in the region about that time. It may well be that the young man had the opportunity of examining this clock,

perhaps even of dismantling its clumsy mechanism. This may have been the decisive factor that led him to take an interest in horology. But here again, we are reduced to mere conjecture.

Two posthumous reports relate the episode of Daniel Jean Richard's meeting with the horse — dealer — a tale that is now a classic, though questionable as regards certain points of detail. One of these reports was written by the banneret Frédéric S. Osterwald and included in his famous "Description of the Mountains and Valleys Belonging to the Principality of Neuchâtel and Valangin". The other, written in 1827 by François Brandt, of Le Locle, is to be found in a "Report Addressed to M. David-Guillaume Huguenin, Councillor of State, Mayor of La Brévine, etc." Although Osterwald undoubtedly has the merit of being the first to discover Daniel Jean Richard, thanks to the evidence of his son Jean-Jacques, and of having used all his talent as a publicist to make him known to the world, we prefer François Brandt's version of the story, which is more vivid and also more plausible from the psychological point of view:

"I remember hearing, as a child, the late M. Abraham Richard, a friend of my parents', say that his father, Daniel Jean Richard-dit-Bressel, when still a small boy, showed such skill in making little carts and other small things of wood, without using any tool other than a knife, that his father was disappointed to see him occupied only in making things that he regarded as worthless and unable to earn him a living. Later on, this ingenious young man, who afterwards introduced watchmaking into our regions, distinguished himself by repairing a horse-dealer's watch, which had been made in London. This man saw the young mechanic (he was in fact a goldsmith) working with such skill that he asked him whether he could mend his watch, which was out of order. When young Richard answered in the affirmative, a great argument took place between him and his father, who, sternly upbraiding him, said that he was incapable of doing such work, and that if he were so presumptuous as to touch the watch he would ruin it, thereby engaging his responsibility, etc. Then, to make peace between the father and his son, the owner of the said watch declared that he did not care about the fate of that 'piece of furniture', which he would gladly sacrifice, and that he wanted the young man to try to repair it, even if he were to give it back in an even worse state. Thereupon, the father agreed, which greatly pleased his son, who at once set to work and managed to get the watch going again. This watch was the first this young

mechanic (goldsmith) had ever seen: it awakened in him the great talent he showed in this branch of industry, which has brought prosperity to our mountains.”

It can be well understood that Daniel JeanRichard tried to construct another watch. The young goldsmith must have felt able to cut out and drill the plates for the movement, to turn and file the pillars and arbors, and to perforate the balance-cock. On the other hand, it was more difficult to make the wheels, the fuzee and the escapement. In this connexion, we may refer to Osterwald’s account, which contains interesting details about Daniel JeanRichard’s first attempts at watchmaking. But we should not lose sight of the judicious remark made by Professor Alfred Chapuis, in his “History of the Neuchâtel Clock Industry”, about the banneret Osterwald’s report: “In the course of the many conversations we have had with the descendants of clockmakers, we have very often noted an involuntary tendency to overestimate the part played by their own families; some of them attribute to their ancestors innovations and inventions that have been made elsewhere. While relating a perfectly true story, Jean-Jacques JeanRichard (and perhaps his brother Abraham) no doubt overstressed the very real merit of his father.”

With this reservation, let us look at Osterwald’s story: “This young man (after having repaired the horsecoper’s watch) took it into his head to make one like it. First of all, he had to think out and make all the necessary things, as well as the springs, the case and the other parts, without having any advice to help him to success. Thanks however to his genius and hard work, he had made sufficient tools by the end of the year to start work on his watch, which was finished six months later.”

“This watch, together with several other parts of his equipment, attracted the attention of the more curious people of the neighbourhood, who entrusted their watches to his care. He worked on them with the greatest diligence, only breaking off his work to give two of his brothers instruction in the craft of the goldsmith. He took up engraving, which he needed in making watches. A passing traveller told him that at Geneva there was a wheel-cutting engine, and he went there on purpose to examine it. But he journeyed in vain, for they would not let him see it. Yet he saw the wheels made on it and he understood that the operation must be performed by means of a roller and a numbered platform to determine the number of teeth and to make the spaces between them absolutely equal. On returning

home, he set to work, and in the end he managed to construct a machine of this kind, which is so useful to the watchmaker."

Having analysed the accounts of François Brandt and of Osterwald, M. Léon Montandon, sometime archivist to the Canton of Neuchâtel, suggests the following explanation: "Daniel JeanRichard had served his apprenticeship with a goldsmith. He returned home when his father was still living, about 1688-1690, when he was eighteen to twenty years old. A traveller — let us admit that he was a horse-dealer — brought him a watch to repair. During his apprenticeship, Daniel had already seen some watches, but this was the first time he had the opportunity of actually handling one and examining it thoroughly. Having set it working again, he tried to make one like it. This incident was the turning-point of his career." In the present state of scholarship, we can hardly go into further details: we can but adopt this tentative conclusion.

GOLDSMITH AND WATCHMAKER

Thus young Daniel JeanRichard was a goldsmith and watchmaker. He seems to have served an apprenticeship with a goldsmith, perhaps at La Neuveville, two citizens of which he afterwards took as apprentices in his own workshop. In those days, the goldsmith's craft was less complicated than the watchmaker's or clockmaker's; it included everything connected with precious metals (silver and gold), as well as the manufacture of valuable ritual vessels for churches and the fashionable silver articles of the time — shoe-buckles, clasps for psalters, perfume-containers and the like. There is documentary evidence of the fact that Daniel JeanRichard supplied the parish of La Chaux-de-Fonds with two chalices for the communion service in the church. In the somewhat austere environment of the Neuchâtel Jura, however, this craft seems hardly to have enabled a man to earn a living, for in the records of the census of 1712, at Le Locle, Daniel JeanRichard is stated to be "a goldsmith and a pauper".

Although he is mentioned for the first time in a document of 1692, when he was hardly twenty years old, as a master watchmaker of La Sagne, JeanRichard was certainly not the earliest horologist in the region of Neuchâtel. A century or two before his birth, clocks were already to

be seen in the church towers of the country. They were the work of locksmiths and gunsmiths. Later on there appeared domestic clocks, as well as portable watches, and the craftsmen appointed to look after them and repair them were known as "horologers".

The first foreign horologists settled at Geneva about 1550 and did splendid work there in the seventeenth century. At the same time, the watch industry spread from Geneva into Switzerland, first of all to certain places on the shores of the Lake of Geneva, and later to the chief towns of our country, such as La Neuveville and Neuchâtel. Here, however, as in many other places, the early development of watchmaking was hindered by the restrictive corporative system. Fearing competition, the "Company of Metalworkers, Stonemasons and Woodworkers" went so far as to kill the goose that laid the golden eggs. It may be added that the Neuchâtel gentry looked down on industry and gave their preference to trade.

Stifled and repressed in the town of Neuchâtel, the young watch industry was however able to find in the mountain valleys the air and space it needed for its development. The region was highly suitable, on account of the natural talents of the "Montagnons" and the prevailing system of commercial and industrial liberalism. To appreciate this, one need only read Osterwald's remarks on the craftsmen of the Jura valleys: "In these mountains", he says, "one often meets people who practise a trade in which they have never served an apprenticeship. At La Chaux-de-Fonds, a bad cobbler has become a skilled enameller, and a schoolmaster has become an engraver. At Le Locle, the sons of a miller are successfully making the most complicated tools for watchmakers. Here, nobody has to qualify as a master of his craft, and therefore there are no obstacles in the path of genius. Everyone chooses his own trade and carries it on in his own way; if he fails, he has only himself to blame, and he soon takes up some other work; if however he succeeds, he quickly finds himself in a position to sell his goods and make a good living." Although these conditions are quite unlike our present system, which seeks salvation in the organization and control of industry to counter the ill-effects of too much free competition, they anticipate the modern American conception of life and work, which has little use for diplomas and offers the worker unlimited possibilities of changing his employment and making his way in the world.

It was at the hamlet of Les Bressels that young Daniel JeanRichard first established himself as a goldsmith, watchmaker and farmer. The farm in

which he lived has been destroyed by fire, but it was a typical specimen of those farmhouses that are still so characteristic of large areas of the Swiss and French Jura. Let us again quote Alfred Chapuis, who gives an excellent picture of a Jura farmstead: "The lower part of the façade is whitewashed or of hewn stone; the upper part is timbered. An enormous roof covers the whole, its shingles held down by great stones; on the top, there is a big Burgundian chimney with a movable cap. To keep out the rain and snow, the two sides of the roof reach down close to the ground; the rain that falls on its vast surfaces is used to fill the tanks providing drinking-water for man and beast. The cattle-shed gives warmth to the adjoining living-accommodation; both are protected by the great store of hay in the loft overhead. The house almost always has a single floor, and the windows, which look towards the south, are close to the ground. The front door opens into a sort of lobby or directly into the kitchen, which occupies most of the available space, with its great gaping fireplace. Hams, sausages and pieces of bacon hang high up in the black soot, with the wood-smoke curling round them. The rooms, which are usually panelled, are barely furnished, except for the living-room with its great green-tiled stove. The furniture itself is very simple. In former times, the watchmaker-farmer would make his own furniture, as well as the reeling-machine, the lace-pillow and the sewing-box. A place of honour was reserved for the clock, which was often the family's proudest possession, and a young man would hardly dare to start out on married life if he could not afford a Neuchâtel clock."

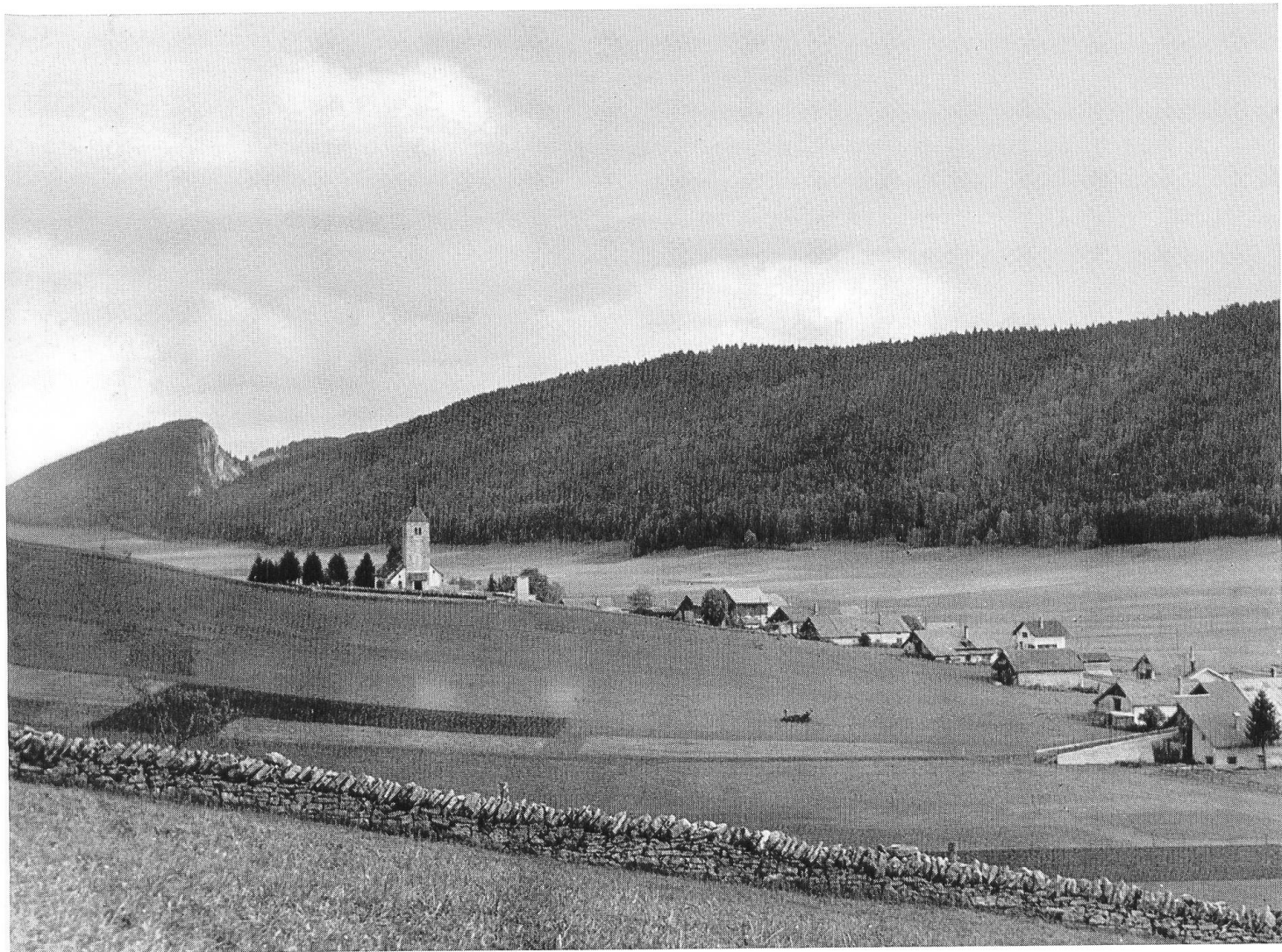
Daniel JeanRichard's first workshop, set up in one of these old farmhouses, was much the same as those little family workshops that are still be seen in certain Jura villages. "These interiors remind us of the days when, surrounded by his sons or a few apprentices, the watchmaker would engrave his name on the timepieces he had made entirely with his own hands. No two watches were exactly alike. The clockmaker would put the finishing touches to the chime mechanism he had himself designed, while his wife and daughters would carefully paint red rosebuds on a blue cabinet, near the double windows with their lining of moss and rowan-berries. While working, they would all listen to the crackling of the fir-logs blazing in the great stove. Outside, the whirling snowflakes settled, melting, on the misty window-panes."

Judging by his supposed portrait, we see in Daniel a kind, thoughtful

and sociable man. His contemporaries liked to visit him, both at Les Bressels and, later on, in his home at Les Monts-du-Loche. Among his friends was Jacques Sandoz of Le Locle, a hairdresser, notary, surgeon, occasional watchmaker and clerk of the courts, who lived at La Chaux-de-Fonds. Though often at loggerheads with his grammar and syntax, Sandoz kept a regular diary in which he recorded the tiniest details of his existence, including his visits to "Bressel, the watchmaker" or "Daniel Bressel", in the hamlet of that name. Thus: "20th July 1693. To Bressel to give back the watch to M. JeanRichard. I eschanged it for my walking-stick." At that time, exchange of goods was quite common. — "6th January 1696. Fitted hair to two wigs and walked to the house of Bressel, the watchmaker, who had put a glass on my watch." — "15th April. Went to Les Bressels with the Mayor, de Rougemont, to see my watch." — "15th December. After dinner, went to Les Bressels, but found the watchmaker out." — "17th December. Went to Les Bressels in the morning, to get my balance changed." — "9th January 1702. Had le Goluset take a clock to Daniel Bressel, to repair the train." — "14th September. Wrote but little yesterday and wasted the rest of my time with Bressel, the watchmaker, M. Perrelet, M. Topinard and others." — "12th February 1703. Daniel JeanRichard was here. I paid him for repairing my clock."

Before we speak about the new methods of work adopted by Daniel JeanRichard, we must say a few words about his civic and family life. In 1695, he and his brothers Abraham and Jean-Jacques were "incorporated" as citizens of Valangin. Four years later the people of La Sagne elected the young master watchmaker of Les Bressels, who was then about twenty-five years old, to represent and defend their interests on the Common Council of Valangin. He retained this honorary office until 1703, during a somewhat turbulent period of the history of the Principality of Neuchâtel and Valangin.

At the age of thirty-three, he married Anne-Marie Robert, of Le Locle, whom he had known since his childhood. Little by little, he saw his five sons, with their biblical names David, Daniel, Abraham, Jean-Jacques and Isaac, grow up and, one by one, work with him as apprentices. There were also two daughters, Suzanne-Marie and Marie-Esabeau. In the autumn of 1705, Daniel JeanRichard left the hamlet of Les Bressels and went to live with his family at Les Monts-du-Loche. As he worked, he could look out through the windows of his sunny workshop over the



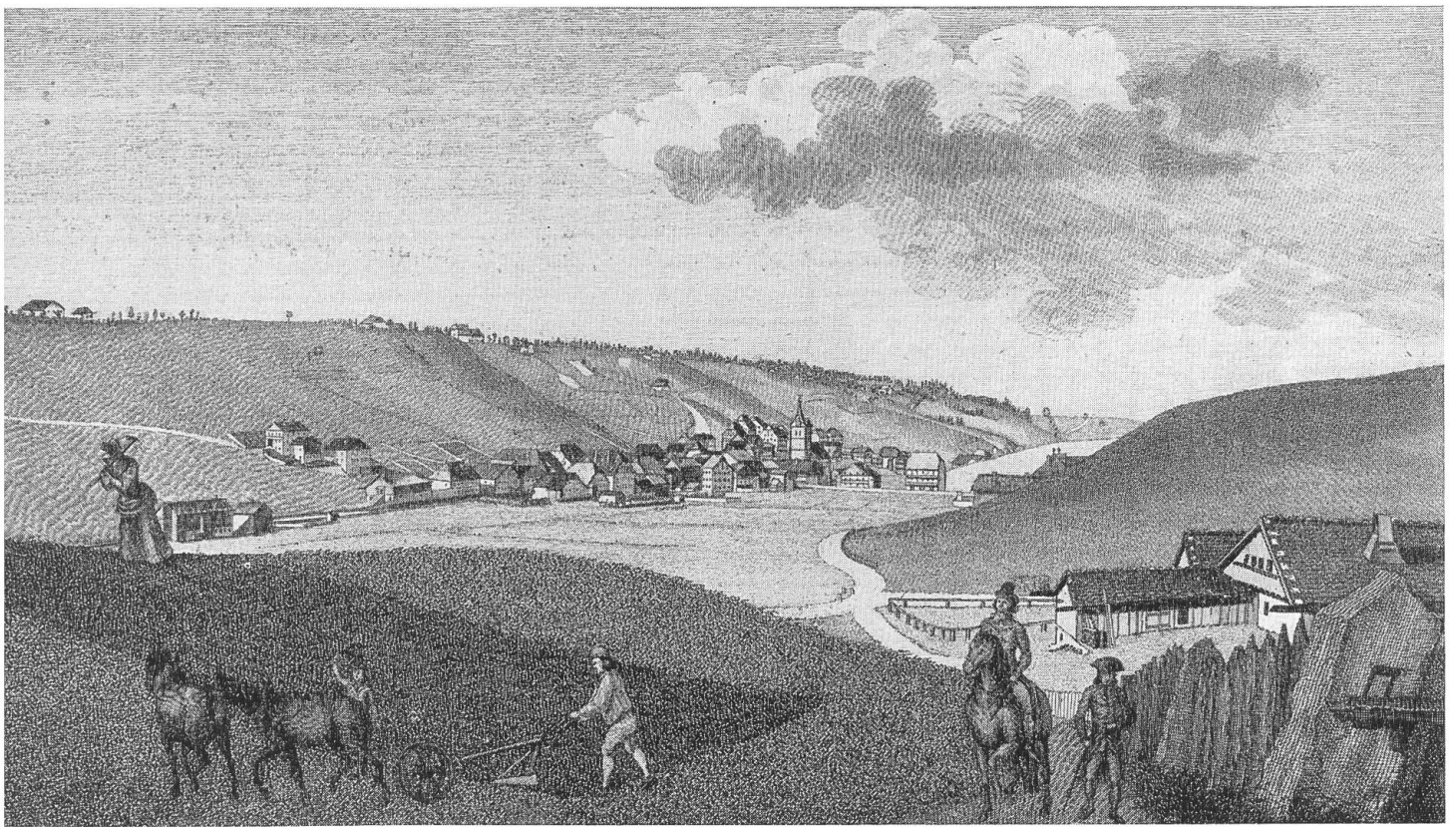
View of the village and valley of La Sagne, the birthplace of Daniel Jean-Richard.



Date and initials of Guillaume Jean-Richard. This decorative inscription dating from 1636 is to be seen above the front door of a farm in the hamlet of Les Bressels.



Supposed portrait of Daniel Jean Richard, by an unknown painter. The expression is serene and benevolent. The old master watchmaker is better dressed than one would expect, having regard to his situation. — Municipal Library, Neuchâtel.



View of Le Locle as it was in the late eighteenth century, by Girardet. In the background, we see Les Monts-du-Locle, where Daniel JeanRichard and his family settled in 1705.

Extract from the records of the census taken at Le Locle in 1712. Daniel JeanRichard and his family are referred to as "Paupers — Daniel Richard. Goldsmith. 40 years of age. His wife 33 years of age, and four small children ... 6 persons."

Pauvre.	Samuel Banderet Habitant, de la douzième Election pour autrui.	1.
Idem.	Fredrich Breffel Habitant 40, sa femme 41, un fils de la seconde Election pour autrui 18 ans, un autre 14, et trois petits Enfans.	7.
Petit riche.	Abram Brandt 60 ans, deux filles 30 à 23 ans.	3.
Commodes.	Daniel Tiffot Viergeux Bouffe 40 ans, sa femme 43.	2.
Tres Commodes	David Luguenin Viergeux 73 ans, et de la troisième Election, pris dans la Compagnie de Callame; sa femme 50.	2.
Pauvre.	Daniel Richard Orfevre 40 ans; sa femme 33, et quatre petits Enfans en bas age.	6.
Cauvre.	Daniel fils de Joseph Droz absent, de l'age 30 ans, sa femme 38.	2.
Commodes.	David Huet Abram e Sandoz age de 40 ans, Abram son freres qui est de la 2. Election, 34 ans, Claude leur frere tambour, et deux d'enf. de la Compagnie de Callame.	3.
Idem.	Jean Jacques Morey Junod de la Compagnie de Callame & de la troisième d'Election 42 ans; sa femme 32, et une petite fille.	3.



La Chaux-de-Fonds as it was in the late eighteenth century, by Courvoisier-Voisin. The place was still distinctly agricultural in character, yet it had an appearance of unity well before the great fire of 1794, which destroyed the greater part of it.

“Noires Joux”, the undulating meadows of the Jura and the familiar country in which he had spent his youth.

EARLY WATCHMAKERS AND THEIR WORKSHOPS

Daniel JeanRichard had not been discouraged by the difficulties that confronted him when he repaired the horse-dealer's watch and needed certain tools to make his first timepiece. Indeed, they rather strengthened his determination and sharpened his powers of observation and organization. Having realized that he could not do everything by himself, he thought out the basic principles of an efficient division of labour. The progress achieved between the finishing of his first watch and the establishment of his first workshop at Les Bressels, and then at Le Locle, enables us to follow the development of the method of work adopted by this young master watchmaker with a view to organizing and extending his production.

There is no doubt that watches had been repaired in the Jura before his time, and some peasant-craftsmen may actually have made watches themselves. Most of these occasional watchmakers worked in isolation, on empirical lines; they seem hardly to have gone beyond the stage of rare chance successes, and not one of them was more than a mere artisan. But JeanRichard went further and had big ideas. Admittedly, he does not seem to have made a watch entirely with his own hands. There are good grounds for supposing that he sent to Geneva, or perhaps to La Neuveville, for certain parts that were very difficult to make, such as the fusee, the balance-spring and the chain; this was for a long time the custom in the Jura. He therefore bought certain parts and assembled them himself; having acquired sufficient experience, he started to produce in his turn the parts that he had previously obtained elsewhere. But instead of doing all this work alone, he took on apprentices and trained watchmakers, employing them in his own workshop or giving them work to be done in their homes. On the unfertile soil of the Jura, he opened up a source of labour, which enabled experience to be shared and human relations to be extended. His workshop became a model for many others. JeanRichard had his imitators and a host of rivals, some of whom actually surpassed him. But that

did not trouble him: he went on steadfastly and earned the confidence and friendship of his colleagues. It was he that gave the first impulse, and a new industry was born in the mountains.

As a matter of fact, the master watchmaker of Les Bressels did not so much invent new methods of organization as renovate and transform those that were applied in the lace industry, with which he had been familiar since his childhood. How often he had watched the lacemakers at work on their pillows in one or two rooms of a great Jura farmhouse! This flourishing local industry had been introduced as a remedy for the economic crisis that had followed the Thirty Years' War (1618-1648) — a period of great prosperity for Switzerland. By doing this work in their homes, the women and girls of the mountains had managed to supplement the meagre earnings of their farms. At that time, Jura lace was sold all over the world. In many a distant country, the products of this local industry indirectly opened up the way for Neuchâtel watches.

Daniel JeanRichard began by imitating the somewhat primitive methods used in this essentially feminine industry, gradually adapting them to the peculiar needs of watchmaking. In setting up his workshop, he was obliged to proceed in easy stages, taking full account of the traditional methods of work that were favoured by the "Montagnons". For a long time, they regarded watchmaking less as a serious craft than as a pastime or accessory occupation; they remained essentially farmers and stock-breeders. This is evidenced by the agreement concluded early in the eighteenth century between Gédéon Langin, a master watchmaker, and his workman Abram Dubois: "The aforesaid Dubois shall be free to assist his brother with the ploughing, sowing, haymaking and reaping, as well as bringing in the aftercrop at Le Cernil, provided that he make up the time lost." This is perhaps the reason why JeanRichard found his first apprentices, not at La Sagne, but at La Neuveville, where work was organized on lines that were more in accordance with the requirements of the watch industry.

However that may be, in the contract he concluded in 1700 with Abraham Bosset, of La Neuveville, the master watchmaker of Les Bressels undertook "to show and teach well and faithfully to the aforesaid Bosset, his apprentice, all that concerns the art and science of watchmaking and other secrets that may be known to Master JeanRichard, hiding or dissimulating nothing, and that to the best of his ability and in all good faith." — That

was not necessarily to be taken for granted: there were some tricks of the trade that no master watchmaker would for all the world have revealed to his apprentices. The story goes that one of them, anxious to learn all he could, was only able to discover his master's secrets by using a small pocket mirror! — Daniel JeanRichard also had to undertake to support his apprentice decently and to provide him with linen for a period of three years, in return for which the young man's father had to make a yearly payment of a hundred crowns, each of twenty-five groats, with an annual bonus of a golden sovereign. At the end of the three-year period of training, JeanRichard handed Abraham Bosset a certificate of apprenticeship and took a new apprentice from La Neuveville, Pétremand Himly, this time for four years.

Himly was followed by a young man from La Sagne, Abraham JeanRichard. In spite of his surname, the new apprentice does not appear to have been related to his master; he completed his term in 1711. In his certificate of apprenticeship, Daniel JeanRichard states that his apprentice "wishes to go abroad . . . to practise the art of watchmaking and to increase his skill by working with good masters". He goes on to certify that his apprentice "has conducted himself as a pious young man of good character, having assiduously attended divine service... and by dint of his industry and diligence, he has made himself capable of practising the craft of watchmaking". — It is probable that JeanRichard trained a number of other apprentices, but their names have not come down to us. However, the banneret Osterwald states that one of them was Jacob Brandt-dit-Grieurin. Daniel's five sons also worked with their father in the family workshop at Les Monts-du-Loche. All of them made watchmaking their career, thus creating one of those dynasties of watchmakers to whom Le Locle owes its prosperity and fame.

Professor Alfred Chapuis, who is well known for his publications on Swiss watchmaking and Neuchâtel clocks, points out that "Daniel JeanRichard's great merit is that he was the first organizer of what is called 'établissement', which already involved considerable division of work. The watchmaker of Les Bressels organized a real industry in miniature, as well as arranging for the sale of watches outside. At that time, this must have needed remarkable practical talent and business acumen, for there were still considerable difficulties. At the source of the great river of the watch industry, we find this modest goldsmith and master watchmaker, whose

common-sense and energy were sufficient to open up new possibilities, thus bringing wealth and prosperity to the people of the Jura."

What are we to think of Daniel JeanRichard's first watches? They have become exceedingly rare today. "Heavy and clumsy-looking in their chased brass cases, they had little to attract the collector. These great 'turnips', whose cases were made of base metal, were made during the transitional period between the late seventeenth and the early eighteenth centuries. They were however far better timekeepers than their predecessors, though as a rule they are quite devoid of artistic merit. Nevertheless, if we examine one of the last watches made by the old master, we can appreciate the progress he achieved during his long, hardworking life. This is a watch ordered from Daniel JeanRichard by the parishioners of Le Locle and presented by them to their pastor, de Bély. The silver case is well made. The movement is nicely laid out; the balance-cock is sumptuously engraved. A brass dial of gilt repoussé work has inset enamelled shields, on which the numerals are painted in blue."

Nevertheless, the strength and originality of JeanRichard are to be seen elsewhere. Leaving it to the "cabinotiers" of Geneva to delight their aristocratic and foreign customers with their charming jewel-watches, the founder of the Jura watch industry deliberately catered for the working and middle classes of the Jura and the Franche-Comté. By making watches, which for so long had been considered luxury articles, available to people of modest means, he opened the doors of the future. About a hundred years later, this realistic principle was taken up again and developed at La Chaux-de-Fonds by Roskopf, the bold inventor of the "proletarian watch", which has made a fortune for his successors.

But that is not the whole story. Realizing the value of adequate tools for his work, the young master watchmaker went to Geneva, as we have seen, to look at the wheel-cutting engine of which he had heard. But he was not allowed to see it. He went back to Les Bressels empty-handed and managed to construct "this machine, so useful to the watchmaker". In this connexion, the banneret Osterwald mentions a characteristic trait of this young master watchmaker's character: "Later on, *he supplied several of his colleagues with these machines*, until such time as there were workmen able to specialize in this kind of work." Thus JeanRichard deliberately turned his back on the restrictive practices and monopolistic tendencies that prevailed at that time in the corporations of the towns. Broad-

pour sonnoître

Les Armoiries des familles des Souverains
de Neuchâtel & de Vallangin & des Pais
Voisin. Quelque desonniée Marquée &
dessinée au plus juste qui soit sonnée &
Marquée. Le plus Exactement quil a
Est possible

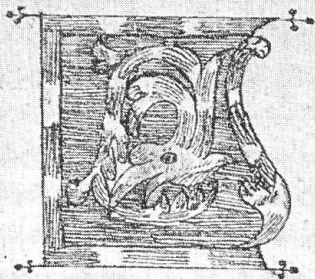
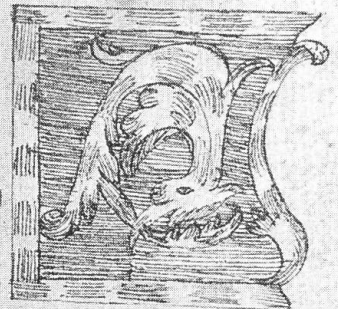
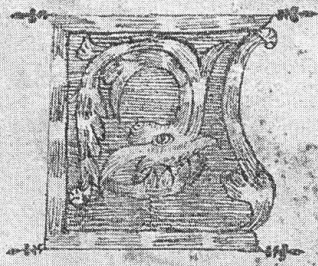
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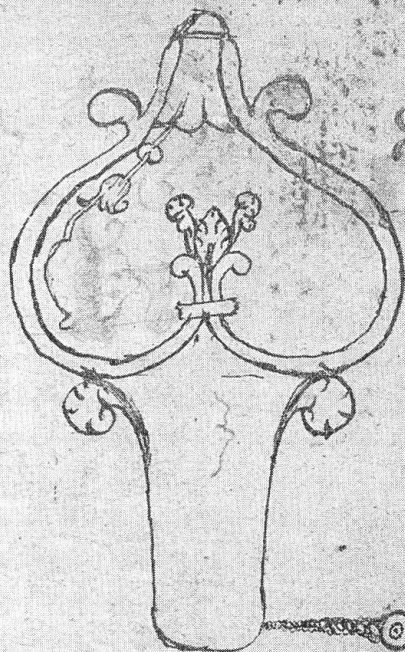
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Despite his humble mountain origin, Daniel JeanRichard, as a typical Neuchâtelais, was passionately interested in heraldry. This is shown by the notebook, still unpublished, in which the old watchmaker and goldsmith made drawings of the coats of arms belonging to the Neuchâtel families of his time, adding a short commentary. — On the last page but one of this notebook, which has been kindly placed at our disposal by M. and Mme Flückiger-Perrenoud of Le Locle, we find the following entry, which has somewhat faded in the course of the centuries: "This book belongs to me, Daniel JeanRichard-dit-Bressel, of La Sagne, Burgess of Vallangin, domiciled at Le Locle in the year 1725." The date is hardly legible, owing to a blot.

que mon lieu se voit pour moi et pour vous

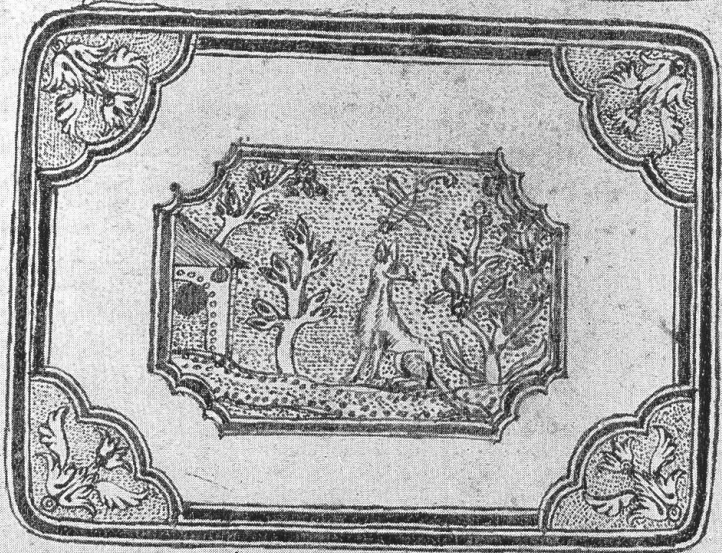


à parait de mentir

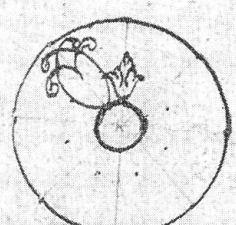
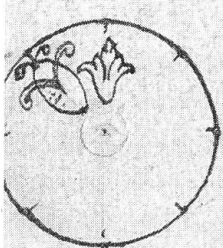


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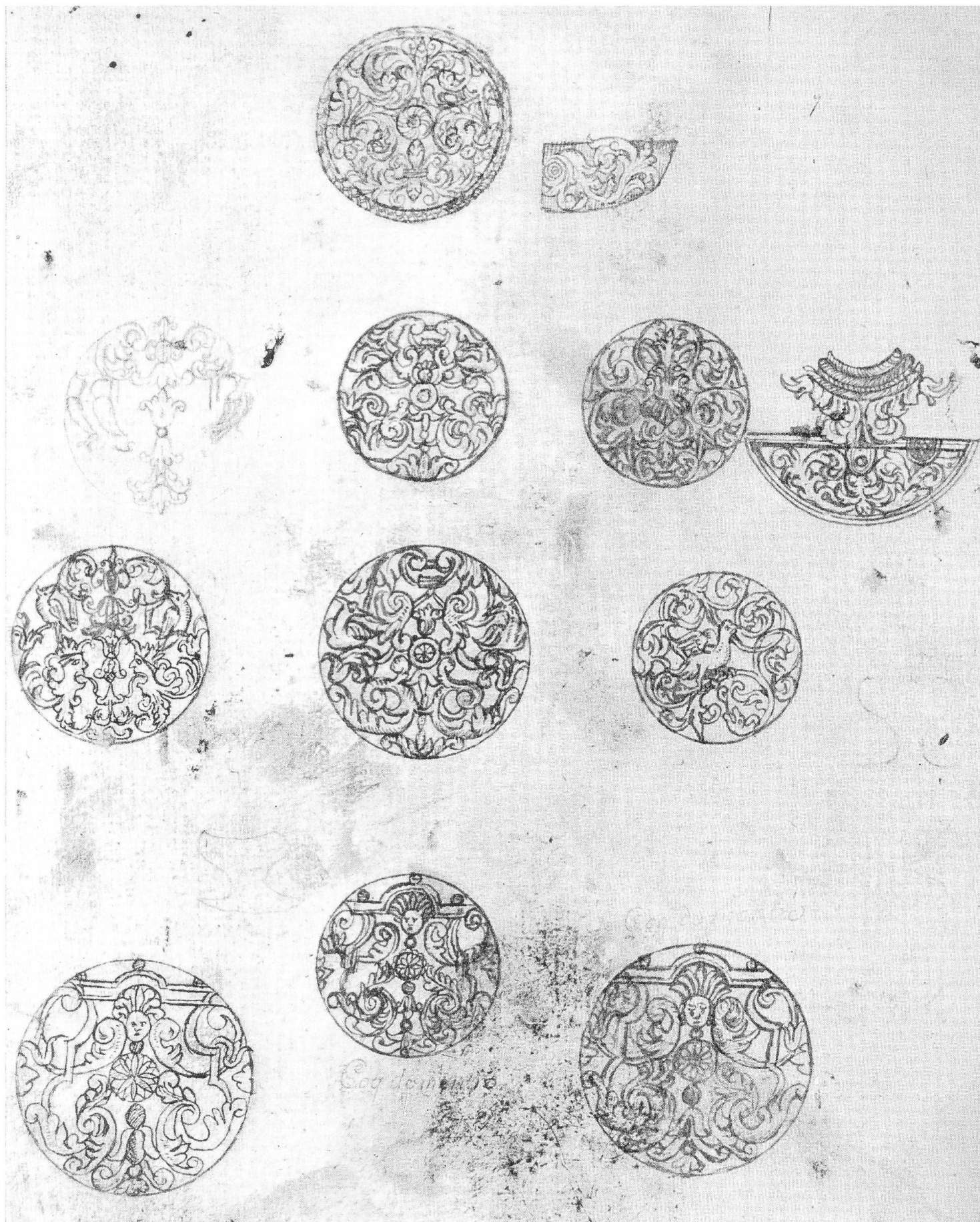
dessein d'une tabatiere 1717



dessein d'une tabatiere 22



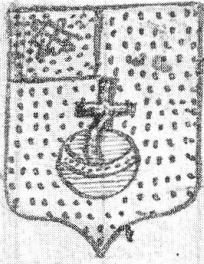
quand nous que



Patterns for balance-cocks, composed by Daniel JeanRichard and drawn in the same notebook. The work is astonishingly like that of the old gunsmiths of the district.

◀ Drawing of a snuffbox, dated 1717, made by Daniel JeanRichard in the notebook mentioned above.

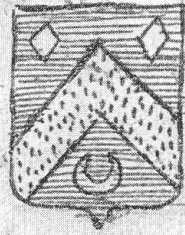
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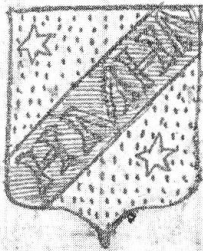
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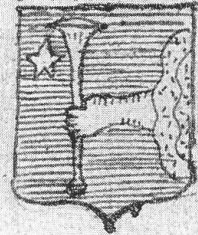
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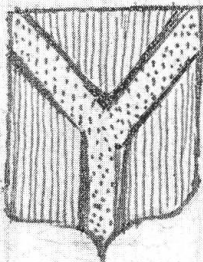
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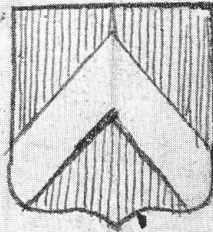
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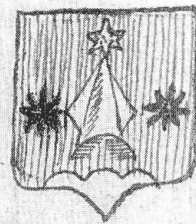
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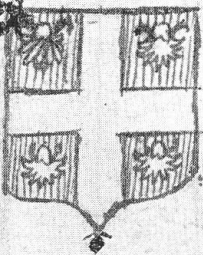
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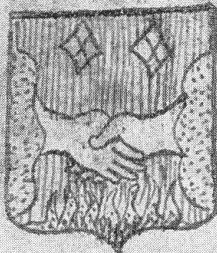
Robert



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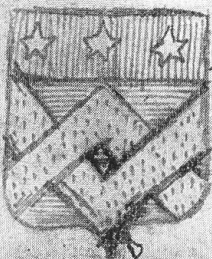
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Sibelin



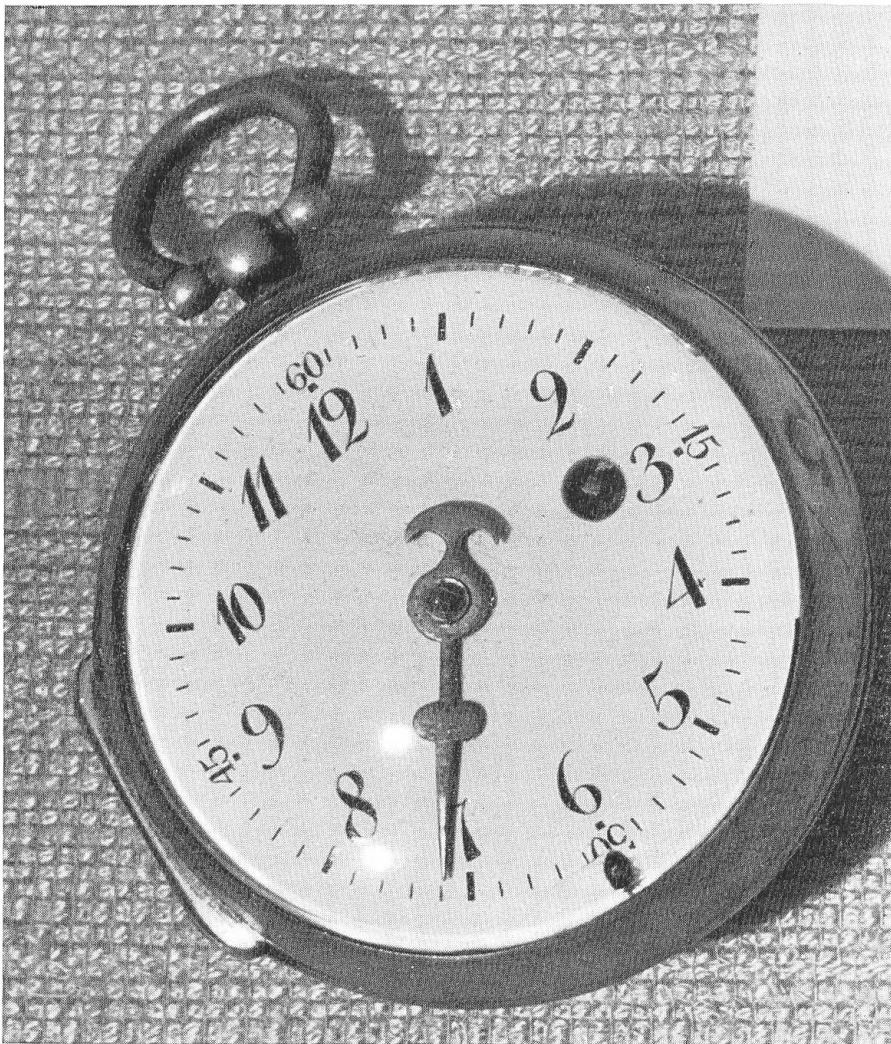
Roetz



Apprentissage.

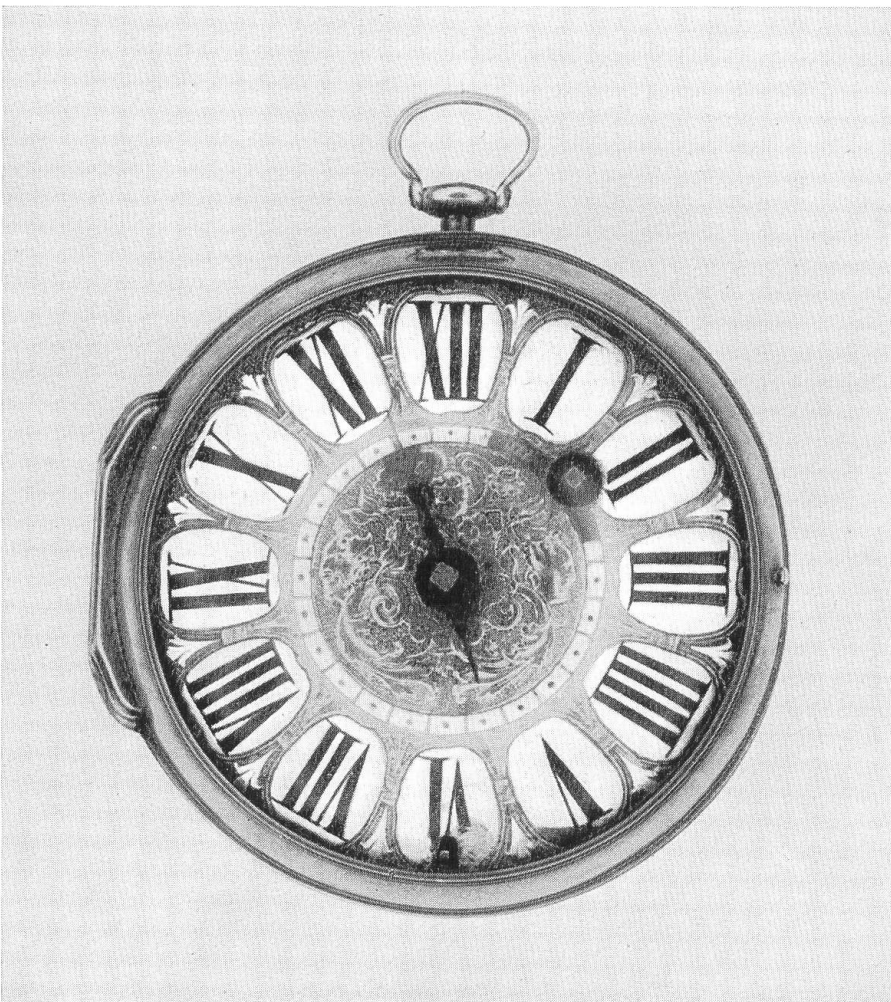
Le s^r. Abraham Bosset bourgeois de la Neuveville
 a mis ^{luy} et affirmé honn^r. Abraham Bosset son filz —
 au pres du s^r. Daniel Jean Richard de la Sagne bourg^e.
 de Wallangin present et acceptant luy Bosset p^r. —
 luy apprendre ~~apprendre~~ l'art & science d'horloger
 pendant le tems ^{de trois} de trois ans conueut^{es} et qui comence
 ce jour des le premier jour de la presente année & sur
 semblable jour finissant pendant lequel tems luy s^r.
 Jean Richard a promis et ^{s'oblige} ~~promis~~ de bien & fidellement
 montrer et enseigner audit Bosset ^{son} ~~luy~~ apprenh^r tout
 ce qui depend de l'art & science d'horlogerie et autres —
 secrets que luy s^r. Richard peut sçavoir sans luy rien
 cacher ny receler et de tout son possible et de bonne
 foy, com^e aussi de le nourrir, blanchir et entretenir
 honnetem^t. pendant ledit tems et au bout du terme luy
 donner lettre d'apprentissage. au reciproque luy s^r. —
 Bosset a promis faire rendre obeissance audit son
 filz lequel estant present et a promis en outre de rendre
 audit s^r. Richard ^{son} ~~luy~~ ^{Maistr} ~~luy~~ ^{Respect} toute obeissance convenable. rendre
bon

Unlike the towns, in which the work of the craftsmen was strictly controlled by the corporations, the Jura still enjoyed a system of commercial and industrial liberalism, which greatly favoured the early development of the watch industry. Nevertheless, it was becoming the custom in the mountain valleys to lay down conditions of apprenticeship, as is shown by the above contract, which was concluded before a notary in April 1700, between Abraham Bosset, of La Neuveville, and Daniel Jean Richard, and stipulating that Abraham Bosset junior was to serve a three-year term of apprenticeship.

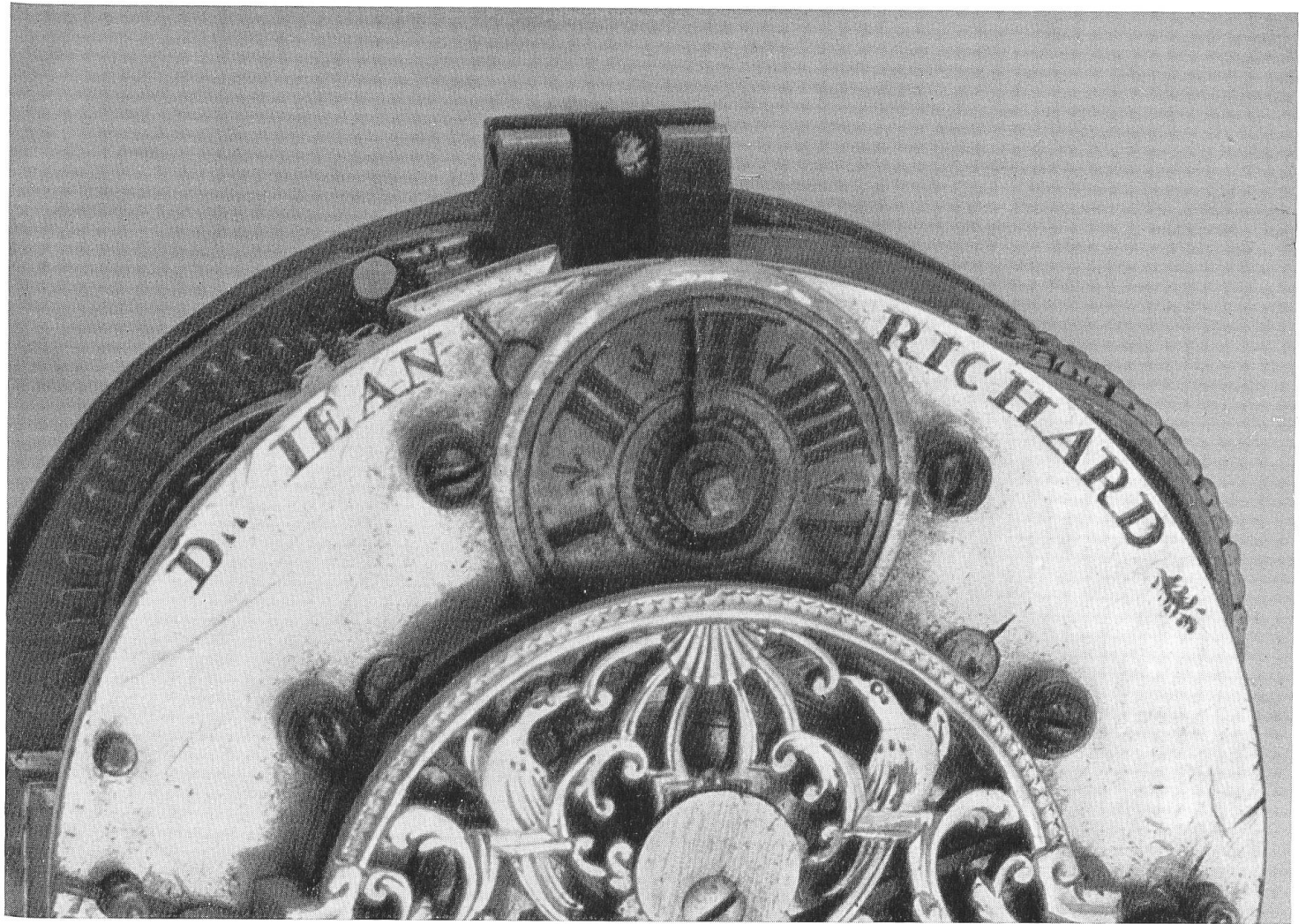


Detail of a watch attributed to Daniel JeanRichard and bearing his signature. It is one of the “tur-nips”, with cases of base metal, which were made during the transi-tional period between the late se-venteenth and early eighteenth centuries. Practically devoid of art-istic merit, these watches were far better time-keepers than their pre-decessors. ►

◀ Daniel JeanRichard’s first watches were heavy and clumsy in appear-ance and had little to attract the collector. Above: a key-wound pocket-watch with a single hand. — Below: one of the last watches made by the old master. The silver case is well made. The movement is attractively laid out, and the balance-cock is sumptuously en-graved. A brass dial of gilt repous-sé work has inset enamelled shields, on which the numerals are painted in blue.



► Various types of watches made by the contemporaries and competi-tors of Daniel JeanRichard. The movement of the watch in the top right-hand corner is signed “D. JeanRichard” and belongs to the Horological Museum at La Chaux-de-Fonds. It has a fuzee and chain, a recoil escapement and an enamel dial with a single hand.



Les conditions cy devant, Communiquées à Honor.
Daniel Jean Richard Horloger sur le Mont du Locle,
& par luy acceptées, conste de la Declaration écrite
& Signée de sa main au pied de la feuille volante &
circulaire dressée à ce sujet. Ledit Sr. Jean Richard
ayant été élu à la pluralité des Suffrages de la
Chambre, pour être Maître Horloger dans la
Maison de Charité.

Messieurs du Comité pour ce préposés luy ont
donné pour apprentifs Les nommez

- 1. Abraham Renaud.
- 1. Jean-Louis Hainzely.
- 1. Jean-Henry Jean Berthoud, et
- 1. George De Montmolin.

4. Lesquels ont commencé le premier jour de May 1741.
pour devoir finir à pareil époque de l'année 1746. aux
clauses, réserves et conditions devant écrites.

Le premier de Septembre de la même année 1741.
Messieurs du Comité ont donné pour apprentif audit
1. Sr. Jean Richard le nommé Jean Jacques Evarre

Le premier Decembre 1741. Messieurs du Comité
ont donné pour apprentif audit Sr. Jean Richard, le
1. nommé Abraham-Henry Grand-Pierre.

Ainsi est. D. Richard Horloger.

mind and disinterested, he was ahead of his time; he was the first to show a really modern conception of watchmaking as an industry.

THE DAWN OF COMMERCIAL EXPANSION

Once he had settled at Les Petits-Monts, above Le Locle, in the autumn of 1705, Daniel JeanRichard found there an environment that was far more favourable and stimulating than that of Les Bressels as regards the increased production and sale of watches. Until that time, the workmen he had trained, apart from his apprentices, like those who worked for him in their own homes, were peasants as well as watchmakers. At Le Locle, however, there was more skilled labour available. In the early days of watchmaking, the little town was a veritable hive of hard work and research. Wherever one went, one would meet proud "characters", skilled craftsmen, ingenious and independent workmen, traders with a fine flair for business, and specialist artists — all of them attracted by the new watch industry. It was a golden age, in which sensational inventions and discoveries were made day after day, before the uncertain and still-distant days of great commercial expansion.

It was with natural curiosity that JeanRichard, high up in his new workshop on the road leading down through Les Mâles-Pierres to the valley of the Doubs and the Franche-Comté, looked out upon the unfamiliar world of Le Locle. His wife had relatives there, and he began to build up a valuable business connexion. In 1713, he was one of the founders of the local charitable institution. — According to a great connoisseur of the period, Dr H. Bühler, "the craft to which JeanRichard had devoted himself body and soul was splitting up into different branches. In the little workshop he had set up, he introduced what was afterwards to be called the 'separate-parts system'. Certain specialists were already concentrating on particular types of work. A hoard of watchmakers surrounded the new 'master'. The division of work, the ordering of tools and parts that were difficult to manufacture, and the final co-ordination of the various individual tasks required organization, and JeanRichard achieved this. While the little firms were run by a single watchmaker or with the help of two or three workmen, carrying on their craft in their own homes, the work-

shop of the 'master', or 'établisser', was already a miniature technical bureau and business office."

The painter Auguste Bachelin, who also did a certain amount of writing, states in his "Watchmaking in Neuchâtel", published in 1888, that "Daniel JeanRichard, his sons and apprentices produced between a hundred and a hundred and fifty watches a year". This corresponds to an average of two or three watches a week. In 1888 too, M. Auguste Jaccard wrote that "the three apprentices trained by JeanRichard himself, Favre, Prince and Jonas Perret-Chez-l'Hôte, together with Daniel's sons, made every year about 200 simple watches with a single hand indicating the hours". This is an average of nearly four watches a week. Small as this output may appear today, it gave rise to difficulties as regards sales and credit. Moreover, it required capital, which the master watchmaker had partly borrowed from the Commune of La Sagne, the rest having been raised through the sale of land in the neighbourhood of Les Bressels.

Where was he to find new customers and markets for his goods? In those days, communications were slow, and lawsuits for the recovery of debts were both costly and uncertain. The condition of the roads was enough to discourage the most seasoned traveller. But hardships have never put off the real businessman: they are his daily bread and his source of profit. Whereas the first hawkers, travellers and watch-traders followed the routes that had already been opened up by dealers in Neuchâtel lace, Daniel JeanRichard proceeded cautiously, step by step. At first, it seems that customers came to him of their own accord, their incentive being natural curiosity and the desire to obtain one of his new watches as cheaply as possible. Publicity was unknown at that time: fine workmanship was the best and most effective advertisement. But in the end, our master watchmaker took to the road in his turn. The manufacturer became a merchant and travelled to find a market for his watches.

He did not at once go down with his sons to Valangin or Neuchâtel, where competition was rife: he found his first customers in the immediate neighbourhood, at Le Locle and La Chaux-de-Fonds, in the mountain valleys. He sold his watches to shopkeepers, artisans, clergymen, magistrates and doctors; their names, in some cases, have come down to us. At Le Locle, his customers included the publican Jacob Jeannot, the surveyor Esaïe Robert, the butcher Daniel Robert, the latter David-François Jeanneret, Moïse Dubois of La Brévine, and many others blessed with the names of

Hebrew prophets. At La Chaux-de-Fonds, his customers belonged to a rather more select and fastidious class. Among them were the mayor of the town, M. Frédéric de Rougemont, the clerk of the court, notary and hairdresser Jacques Sandoz, the surgeons Perrelet and Topinard, and the pastor de Bély.

Like the old lace-merchants, Daniel JeanRichard was careful not to miss the fairs that took place periodically, in the Erguel and the Bishopric of Basle, in particular, where his watches found a ready sale.

One region, the neighbouring Franche-Comté, seems to have attracted him in the early days, perhaps on account of the natural affinity between its people and those of the high valleys of the Jura. Unfortunately for him, the political situation was for a long time unfavourable for travelling and doing business in that area. On account of the persecution of the Huguenots and the dispute between the "Contistes" (partisans of the French Prince de Conti) and the "Nemouristes" (supporters of "Marie, by the Grace of God Sovereign Princess of Neuchâtel and Duchess of Nemours"), the Neuchâtel authorities had on several occasions forbidden their subjects to travel in these "dangerous regions". When the Principality of Neuchâtel came under the rule of the King of Prussia, in 1707, relations again become somewhat strained, especially on the French side.

One day, by the back door, it is true, Daniel JeanRichard and his sons were at last able to enter the Franche-Comté. In a note written on the 21st January 1827 by an anonymous informer and handed to M. David-Guillaume Huguenin, Mayor of La Brévine, we find the following statement, which solves the problem as to whether Daniel JeanRichard made other watches or clocks which were more complicated and more perfect than his earliest ones: "People did not say that he had made any pieces of clockwork other than simple pocket-watches, which he sold for 20 crowns each — i. e. about 90 or 100 francs of our money of today — and which were by no means easy to trade at the beginning; he could only sell them to convents and priests in the Franche-Comté." This informer also gives some other interesting details: "Later on, with the help of his sons, he added the date of the month, seen through a little square hole cut in the dial under midday, by means of a large wheel cut on the inside and placed concentrically in the false dial. Little by little, the quality of the work was improved, both on account of practice and of the repeated purchase of parts at Geneva." — The note ends with the remark: "The fore-

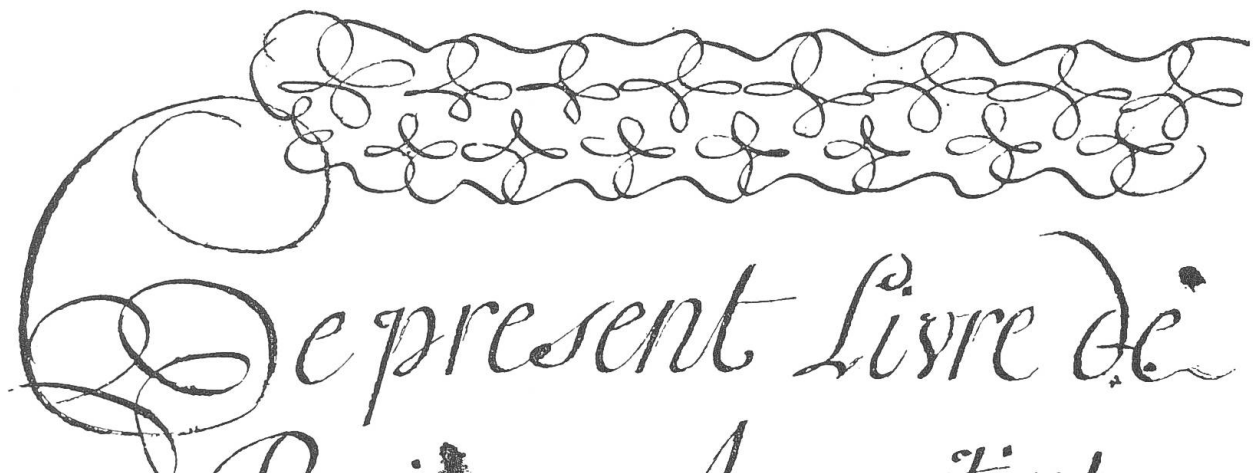
going has been communicated to M. Ch. Hi Richard by Mons. Abrm Louis Perrelet, elder of the church of Le Locle, with whom the Said Mr Richard served his apprenticeship in watchmaking from 1798 to 1802.”

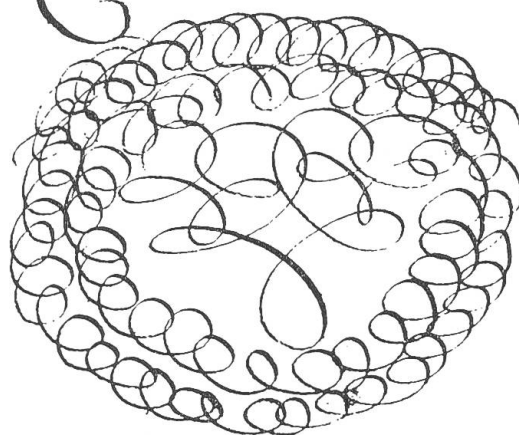
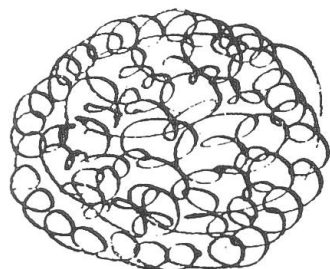
Towards the end of his career as a master watchmaker, Daniel Jean-Richard and his sons managed at long last to break down the closed doors of Valangin and Neuchâtel City. In the early 1740's, according to their “Record Book”, they actually sold a Parisian watch with a minute-hand to M. de Perrot, Secretary of State. About two months before JeanRichard's death, his son Daniel supplied a repeater watch to M. Huguenin, Burgo-master of Valangin. The same “Record Book”, which is really a record of accounts and orders, states that on the 30th August 1741, “M. Osterwald the Younger, Minister of the Holy Gospel, owes us 22 francs, being the balance of payment for a watch sold to him at Neuchâtel by our brother Daniel.” Here is another delightful detail: “M. Daniel Huguenin, shoemaker, owes us 5 francs minted at Tours and one pair of shoes in exchange for an alarm-watch which we sold to him on the 5th November 1742.”

At that time, the JeanRichard's production and sales organization was working as regularly as the stout pocket-watches of the Neuchâtel Jura. Daniel JeanRichard's sons, trained in their father's workshop, were thoroughly well versed in the craft of watchmaking. They had gone with their father to buy his materials and sell his goods, and had travelled far and wide. Thus they were well established and had good contacts with their customers. The new dynasty of the JeanRichards had earned acceptance and fame.

A few days before their father's death, the five sons agreed on the division of his property and decided to go on working together. They were by no means rich, but their material circumstances improved in course of time. Their father's estate amounted only to 3,017 *livres*, i. e. about five thousand Dollars in our money of today. A meagre legacy, after fifty years of creative work! But that is the lot of most pioneers: others reap what they have sown. Men pass on, but their work remains. It is in the very order of things. But Daniel JeanRichard's sons had things more precious than a fortune — a great name, an example and a future.

Despite the difficulties he had had to face and many more that lay ahead, the old master watchmaker of Les Monts-du-Locle could die in peace, knowing that he was leaving his life's work in good hands. Some of his colleagues and competitors had admittedly had careers that were

Ce present Livre de
Raison Appartint
a Moy Daniel Jean Ri-
chard Dit Bresset de la
Sagone Bourgeois de Val-
lengin: fait sur le Mont du
Locle le 27 Janvier 1741



The JeanRichards' "Record Book", dated at Le Locle, January 27th, 1741. It is not a collection of maxims, but an account- and order-book of great interest. Begun by Daniel JeanRichard shortly before his death, it was continued by his sons until 1749. This precious manuscript has been kindly placed at our disposal by M. and M^{me} de Choudens-Richard, of Le Locle.

Du mois de Decembre 1740.

David fils de feu Moyse Gtherin Grand des ¹⁵
Berthardes me doit vingt et un Escus petits —
pour une Montre à sangloises que je luy ay
reçue et livrée.

Jacob Candoz demeurant à la Sagne me doit
pour le rabillage de sa montre à luy —
rendue par les fils de Jean Moysse humber.

Le Sieur Moise Du Bois Marchand
drapier me doit quatre piécettes pour
le rabillage de sa montre à luy —
rendue.

Abram. fils de Daniel Jeanneret Gros.
Jean me doit six piécettes pour le
rabillage d'une montre à Heveit
à luy rendue.

Jonas Jeanneret Vitrier me doit trois —
piécettes pour le rabillage de sa montre
à luy rendue par son fils.

Monsieur David Huguenin Emailleur nous doit
Vingt Batz. & Carottes de 1746 & Sapparts
p. celles de 1745.
Led. S^r. Huguenin doit de plus une chaîne de
Montre -

1748 26^e Janvier Envoyé à M^r. David -
Huguenin par Daniel Favre
Quatre Ecu à couronne p. 42 f^{te} - 16ⁿ - 16 fⁿ - 11 dⁿ
Et servier livré à M^r. David Huguenin
une Montre à Parisienne à Minutz que luy.
avons faite, pour le prix de Dix Ecu Neuf.
Monrte^r. Huguenin a fourni la Boette, &
le cadran, Quel faut de dire sur ledito -
Dix Ecu Neuf, La Boette & cadran monte
à 78 Batz. Reste à 34 francs - - - - 34ⁿ - 11 - 11

1748 27^e Juillet J'ay fait compte avec le
S^r. David Huguenin Emailleur, nous
avons compté par les articles de parts et
d'autre, & somme quitte de l'un à l'autre
jusqu'à ce jour,

Logis à Dijon chez Hermanflet près Notre Dame
 L'Horloger de Dijon
 M^r. Maffon, Vivant au sein du Miroir, Michel, à la
 Place Royale, Gilbert Rue de l'Église, Niche, Place Royale
 M^r. Allard l'horloger à Dole
 gens de Dole de Notre-Dame
 M^r. Rigolier le cadet à la Grande Rue, homme riche
 M^r. Languand Propriétaire
 M^r. Chappuy l'horloger de Dole, à lui vendu une montre
 à l'Église de l'Église de l'Église de l'Église, en
 Dole de Dijon en tirant du côté du Maçonnet
 Richard Bourgeois de Dijon près Notre Dame
 M^r. Raymond Murat. qui se trouve sous à Dijon

Another page of the "Record Book", which contains valuable information about the Jean Richards' customers in the Principality of Neuchâtel and elsewhere, in the Franche-Comté and Burgundy.

more brilliant and more lucrative than his own, but that did not worry him, for envy and bitterness were foreign to his nature. In this connexion, Auguste Jaccard, whom we have already quoted, asserts: "The portrait that has been handed down to us as his and has been reproduced in the form of a medallion (1888) reflects a serene and contented mind, as well as a certain fastidiousness in the matter of dress, and shows that he was in fairly easy circumstances for the time."

Let death come: he had no fear of it. Quiet and steadfast, he would welcome it calmly, as he had welcomed his sons, his colleagues and his customers, who had been drawn to him by his kindness and by the power of his example. He was nearly sixty-nine years of age. Whatever happened, he was and would remain Daniel JeanRichard-dit-Bressel, founder of the Jura watch industry. His work was finished: others were to carry it on and develop it to a degree he had never dreamed of. Despite the oblivion into which he was soon to fall, the success and prosperity of the Jura valleys would provide the finest and most living tribute to his memory.

THE FORERUNNER DIES AND IS FORGOTTEN

In the spring of 1741, on the 21st April, the funeral bell tolled in the tower of the Minster at Le Locle. The goldsmith and master watchmaker Daniel JeanRichard died, at the age of sixty-nine years, in the bosom of his family. To the last, his dimming eyes had looked out on the "Noires Joux" and the meadows of the Jura. He passed on into Eternity his soul at rest. A few days later, the registrar, impassive, entered in his Register of Deaths, in his fine Neuchâtel hand, the customary formula: "On ... April 1741, buried a man". Not another word, not even a name. Such was the solemn usage, alike for all men at the time of their death. Let us accept it with respect.

From that day onward, there is no material trace of Daniel JeanRichard. No obituary notice appeared on the day following his death. Even his tomb has disappeared, for the cemetery of Le Locle has been rearranged. The farm at Les Petits-Monts in which he had his workshop was rebuilt at the end of the nineteenth century. And it is by no means certain that it was his actual home. According to Professor S. Guye, "There are in ex-

istence one watch and two movements bearing the signature 'D. Jean-Richard du Locle', which are very probably, though not certainly, authentic. Two of these, including the watch, belong to the Horological Museum at La Chaux-de-Fonds, and the third to the Horological Museum at Le Locle. All of them are of the so-called 'recoil-escapement' type, without complications and are of primitive appearance. They may however be the work of another craftsman with the same name." We only have a single supposed portrait of Daniel JeanRichard, the work of an anonymous painter of no great ability. The lithograph done by Elie Bovet, of Geneva, dates only from the nineteenth century, like the statue at Le Locle, which is the work of the sculptor Iguel.

Few men have left so little trace of their lives on earth. But his personality and his work have kept their secret and their strange power of regeneration and rebirth.

REBIRTH AND FAME

The years passed. In the high valleys of the Jura, more and more specialist workshops appeared; others were set up in the valley of St. Imier, the Franches-Montagnes and the valley of Joux, eventually spreading further eastwards into the country between Bienne, Solothurn, Schaffhausen and other places in the vicinity. Orders came pouring in. The watch-merchants went further and further afield to sell their precious merchandise. How could the "Montagnons" of this new age, who had hardly escaped from their traditional poverty and were harrassed by so many new cares, find time to remember Daniel JeanRichard? For them, the future was more important than the past, and recent events could only be appreciated if they were viewed from a certain distance.

Rightly or wrongly, the people who live along the shores of the Lake of Neuchâtel are said to have little sympathy or understanding for the mountain-dwellers. Yet it was a man of the plain, the observant and broad-minded banneret Osterwald, of whom we have already spoken in connexion with Daniel JeanRichard's early days as a watchmaker, who recalled the memory of the forgotten pioneer. His "Description of the Mountains and Valleys Belonging to the Principality of Neuchâtel and Valangin" was published in its final form in 1766, about twenty-five years after

the death of JeanRichard. The novelty of the subject, the charm of the text and, apart from a few details, the reliable information given by the banneret delighted the public. With his inquiring mind and journalistic talent, the author anticipated Michelet's aphorism: "History is a resurrection".

Apart from his description of a social class and his portrait-gallery of famous inventors and characters, what was it that Osterwald offered his readers, especially those who lived in the mountains? Was it a myth? By no means. It was a man, one of themselves, so like them that they saw in him their own image and at once took him to their hearts. Daniel JeanRichard, a man of humble mountain stock, yet greatly talented, appealed to their imagination. This posthumous revelation affected a number of enlightened people, and, little by little, a feeling of remorse and the desire to make generous amends filled the hearts of the people as a whole.

Without wishing to offend our Neuchâtel friends, we may perhaps wonder whether this was not a sort of "jeanrichardization" that led to something very much like the cult of personality. This may well be the feeling of those who read through the long and tiresome catalogue of articles and monographs written about JeanRichard "after Osterwald", whose account remains our best, if not our only, source of information. Every author adds his own purely imaginary details. It can well be understood that this tendency to idealize the master watchmaker was followed by a reaction. This is why it is so difficult, today, to speak objectively of Daniel JeanRichard, keeping one's sense of proportions. He was not the sole creator of the watch industry in the Neuchâtel Jura; but he certainly was one of its most active and most skilful promoters, like Brandt-dit-Grieurin and Ducommun-dit-Boudry, whose fame eclipsed his own in the eighteenth century. Yet the fact remains that the prodigious development of Le Locle and La Chaux-de-Fonds and their host of factories, which turn out hundreds of thousands of timepieces and send them all over the world, began in Jean-Richard's tiny workshop at Les Bressels, then at Le Locle, just as the great oak-tree springs from the acorn.

From the 1830's and 1840's, there grew up the irrepressible popular legend of the young "blacksmith and locksmith" of La Sagne, whereas Daniel was in fact a goldsmith and watchmaker. Auguste Bachelin's picture (1868) of the meeting with the horse-dealer at the forge confirmed the popular idea of the "gifted young blacksmith" — an idea that tri-

umphed when Iguel's romantic statue was set up at Le Locle. It is an amusing fact that the sculptor, puzzled as to the features of his hero, got his own daughter to sit for him — which certainly did not take away from the charm of the statue. To quote M. Léon Montandon's philosophical remark: "No matter what is said or published, Daniel JeanRichard will remain for the public, thanks to Bachelin's picture and Iguel's statue, a blacksmith and locksmith. But what does this matter, after all? The main thing is not that he learned this trade or that, but that he founded the industry to which our mountains owe their prosperity. It is for this that he is entitled to the gratitude of the people of Neuchâtel."

The unveiling of the statue of Daniel JeanRichard, in 1888, was celebrated with great enthusiasm. It was followed in 1941 by the brilliant commemoration of the 200th anniversary of his death at Le Locle. These ceremonies led to much new research and a whole series of valuable publications, to which we are greatly indebted.

WATCHMAKERS PAST AND PRESENT

For nearly two centuries, writers, travellers and artists, both Swiss and foreign, have contemplated the world of the Jura watchmakers with mingled feelings of affectionate banter and profound esteem. Daniel JeanRichard was indeed so much a part of this population of mountain farmers and watchmakers that it would be impossible to speak of him, however briefly, without mentioning this social class to which he belonged. Of course, these stubborn and susceptible watchmakers have their faults. Taking them as they are, one is however bound to take notice of them and treat them with respect.

Let us recall the words of two clear-sighted observers of the present, who have also written, with full knowledge, of the past. With all their differences, the Vaudois C. F. Ramuz and the Neuchâtelois Louis Loze are alike insofar as they have both endeavoured, not only to rediscover the atmosphere in which the Jura watchmakers grew up and still live to this day, but also to reveal their peculiar psychology and the philosophy of their craft.

"Solitude", says Loze, "is the source of all human greatness. It is the good ground, in which the seed flourishes. It is a school of patience and

concentration. Before they made their name as metal-workers or goldsmiths, our forefathers had learned to observe the plants and thus to deepen their awareness of things. They were enthusiastic and enterprising because they were ready to begin their work all over again. The patience of the peasant was to become the basis of the inventive endeavour of the craftsman."

"For a long time", adds Ramuz, "the Jura craftsman made every part of the watch, using the simplest of means; he had no machines, but only his tools. He himself was a machine-tool, as he sat before his little window that looked out on the still, bright landscape; for his work could only be done in a bright light, and this was given him in ample measure by the snow that gleamed under the clear, cold sky of the mountain winter. His mind would often wander, for it was never entirely absorbed in his work, which required well-developed reflexes rather than reflexion. Stimulated by the work of his hands and by the problems that were inherent in it, he would often be led to think of other problems, of a more general kind. — This twofold existence explains the whole character of the industrial workers of the Jura. Each one is, or for a long time has been, his own master, working on his own account, laying down his work and taking it up again as the fancy takes him."

"Very often", says Loze, "over-ingenious craftsmen have paid the price of solitude. Unremitting research and an obsessive desire for perfection entice the weaker brethren on to the dangerous road that leads to Utopia... This is why the shrill bell of the lunatic sometimes rings through the solemn chorus of toil. Picturesque or merely pitiful, these self-taught eccentrics fascinate us nevertheless. For their very strangeness is combined with the enthusiasm that drives master and apprentice along the road to the promised land of progress."

"The day dawns when, behind their leaded window-panes, JeanRichard and his descendants look out not only on the tragic, familiar Jura with its regiments of firs and its grey stone walls, but on an abstract landscape in which the curve of a balance-spring, the profile of a wheel and the lines of the meridians form a harmonious composition. They learn to count each second of the time they waste so freely. They are dazzled by the possibilities of their craft, by the ever-greater perfection of their workmanship. They gather together only to separate soon afterwards; they become diligent apprentices only to make themselves leaders of their craft."

"Yesterday, they settled among the Noires Joux; today, they inhabit

the realm of the abstract and exploit the field of technology. — These mountain folk, who still have their cowshed and their kitchen garden, have become the distant cousins of the astronomers and physicists. When the watchmakers of Fontainemelon drive over the Mont-Sagne to deliver their rough movements to the factories of La Chaux-de-Fonds, the forest path beneath the wheels of their little traps becomes a king's highway, leading from the craftsman's bench to the workshops of a great industry."

In the course of this confrontation, or rather this dialogue, between C. F. Ramuz and Louis Loze, we gradually become aware of the peculiar atmosphere of the watchmaker's workshop, past and present. "In the old days, a bench was set up in every window-recess; on entering the room, the visitor could see only the back of his host. To greet him, the watchmaker had to turn round on his swivelling stool. It would not be long before he resumed his former position, facing the daylight, for it was the custom to talk and work at the same time. Human voices would mingle with the hum of the lathe, the cracking of the firewood in the tiled stove and the noise of the pliers and tweezers. A canary would be warbling in its cage. Now and again, a workman would start up a song, and all would join in. Errand-boys in their black capes would come and go, with their blue cardboard boxes under their arms." (Loze).

Ramuz goes on: "Though the old Jura craftsman, whose work has become more and more specialized, is now a workman, having left the old family workshop for the factory, he is still a lover of nature — he often remains bound to the soil by what is left of the old farm — and the watch factory is nothing like an engineering works of the ordinary kind. On the contrary, it is a large, well-built edifice, with broad windows regularly disposed along its main façade. It resembles a modern school-building, in which everything works cleanly and silently, generally by electric power, with few noisy machines, but a host of tiny appliances turning quietly on the corners of the workbenches, where the watchmakers sit facing the splendid forest of fir-trees or a meadow with its spring of pure water."

The watchmaker still welcomes his friends and talks with them in a way that is full of charm. "Whether famous or obscure", says Louis Loze, "the visitor would appreciate the hardworking family atmosphere and enjoy a welcome unique in his experience. These watchmakers had a friendly, slightly mocking way with them, though they were never lacking in courtesy. They were dour and reserved, eager to discuss ideas and events,

lovers of a spicy anecdote, passionately interested in things mechanical, always ready to talk about travel or politics... Their talk was like themselves: workshop slang mingled with relics of the old *patois*, and an occasional aristocratic phrase of a bygone age would gleam forth like a jewel in the movement of a watch."

There are three factors that have always played a major part in the life of the watchmakers: nature, reading and hospitality. "For them, Nature herself is but a well-regulated watch. They love to ramble through the woods and over the hills, for they are passionate nature-lovers." — Nothing can induce them to tell you where to find the best mushrooms. Each family has its favourite corner, where they go at weekends, though now perhaps they take their car or scooter and go down to eat trout at Auvernier or to hear a concert, as they love to do. — They lay down their emery buff or their file to turn over the pages of a book on wild flowers, to draw a flower or to stuff a bird — and they are voracious readers.

"Sociable, open-minded, anxious to miss nothing that is going on, the watchmaker is easily drawn into conversation", says Louis Loze in his conclusion. "While at work he meditates, sitting silently at his work-bench hour after hour; then, all of a sudden, he feels the need for company and conversation. When he goes to town with his dials or rough movements, he likes to end his day with his friends, exchanging confidences and discussing the latest news." — This explains the success of the anarchist movement in the Neuchâtel and Bernese Jura between 1860 and 1878, under the influence of Bakunin and Kropotkin, D^r Coullery and Schwitzguébel. Since then, however, this anarchist movement, which appealed so greatly to the deeply individualistic hearts of the "Montagnons", has been supplanted by a quieter and more orthodox form of socialism and trade-unionism.

In conclusion, C. F. Ramuz adds: "The real wealth of the industrial Jura lies in its tradition of fine handiwork. Its source is not to be found in the production of watches, which may at any time become obsolete on account of progress: it springs rather from a certain quality that governs that production. To put it in a word, it is *spirit*. It is essentially a matter of inventiveness and vigilance. As long as these values remain, there is every reason to hope that the industrial Jura will manage to adapt itself to the more and more quickly changing conditions of the contemporary world."

DIFFICULTIES ARISE

Seen from afar, the watch industry may well seem to resemble the River Pactolus with its gold-spangled waters. And of course, for those who work in it, it is a highly appreciable source of profit. Yet this industry has always had to overcome obstacles of every imaginable kind. The worst difficulties are not those that are inherent in the technique of a craft, but are due to human agency and to other external factors.

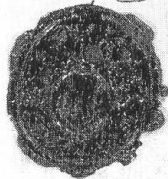
In the old days, all that was needed to open a watchmaking workshop or a retail store was a skilled hand and business acumen. Things have become terribly complicated since then. First of all, it was necessary to sell one's watches. The first watch-traders and the travelling craftsmen who sold their tools and repaired watches, followed the routes opened up by the old hawkers and dealers in Neuchâtel lace. Some of them were very popular, like the famous Pierre-Louis Petitpierre, forerunner of the modern commercial traveller. One day, he was trudging with his load along the stony roads between Couvet and Geneva, when he met, or rather caught up with, the mailcoach. The postilion kindly invited him to take a lift. "No, thank you", replied the malicious watchmaker, "Time's getting on, and I'm in a hurry."

Colonies of Genevese watchmakers had become established in the Near East as early as the seventeenth century; but it was not until the end of the eighteenth that certain Neuchâtelois ventured as far as Spain and Portugal. By the first third of the nineteenth century, these intrepid and far-sighted merchants were to be found further afield, in the Americas and in the Far East. Since then, like Scipio Africanus, they have been known by nicknames indicating the countries in which they gained their greatest commercial successes. Thus we find Frédéric Droz the American, Charles-Henri Challandes the Brazilian, and the Bovets of China. The Bovets had the bright idea of selling their watches to the Chinese two at a time, so that the two sides of a given model might be displayed in a glass case or hung on the walls of houses. These watch-traders, whose methods of doing business have greatly changed in the last thirty or forty years, were always up against the eternal problem of import duties. On account of its small size and great value, the watch has always been as tempting for the smuggler as for the customs authorities. Heinrich Moser of Schaffhausen, one of the pioneers of the watch trade in Russia, never wanted to

NOUS *Jean Henry*
Vuagneux, MAIRE DU LOCLE,
 POUR SA MAJESTÉ LE ROI DE PRUSSE,
 dans la Souveraineté de Neuchâtel & Valangin en
 Suisse, &c.

Certifions Que le sieur Isaac Richard de la Sagne Bourgeois de Valangin
 se allant dans Diverses Provinces de la France pour y vaquer à ses
 affaires particulières, il nous à requis du présent que nous lui avons accordé
 pour lui servir de Passport & voyager avec plus de facilité & de sécurité
 et par lequel nous déclarons que le sieur Richard est garçon d'honneur
 & de probité, et que dans nos Contrées l'air respire un air pur & sain.

Partant nous requérons tous ceux qu'il appartiendra de lui
 donner libre & sûr passage sans aucun empêchement, sous offre que nous faisons
 du réciproque en pareilles & autres occasions. Le présent muni du Cachet de nos
 Armes, & du Seing de notre Gréfier ordinaire. Fait au Locle le 2. Septembre
 1786.



Par Ordonnance

J. Vuagneux

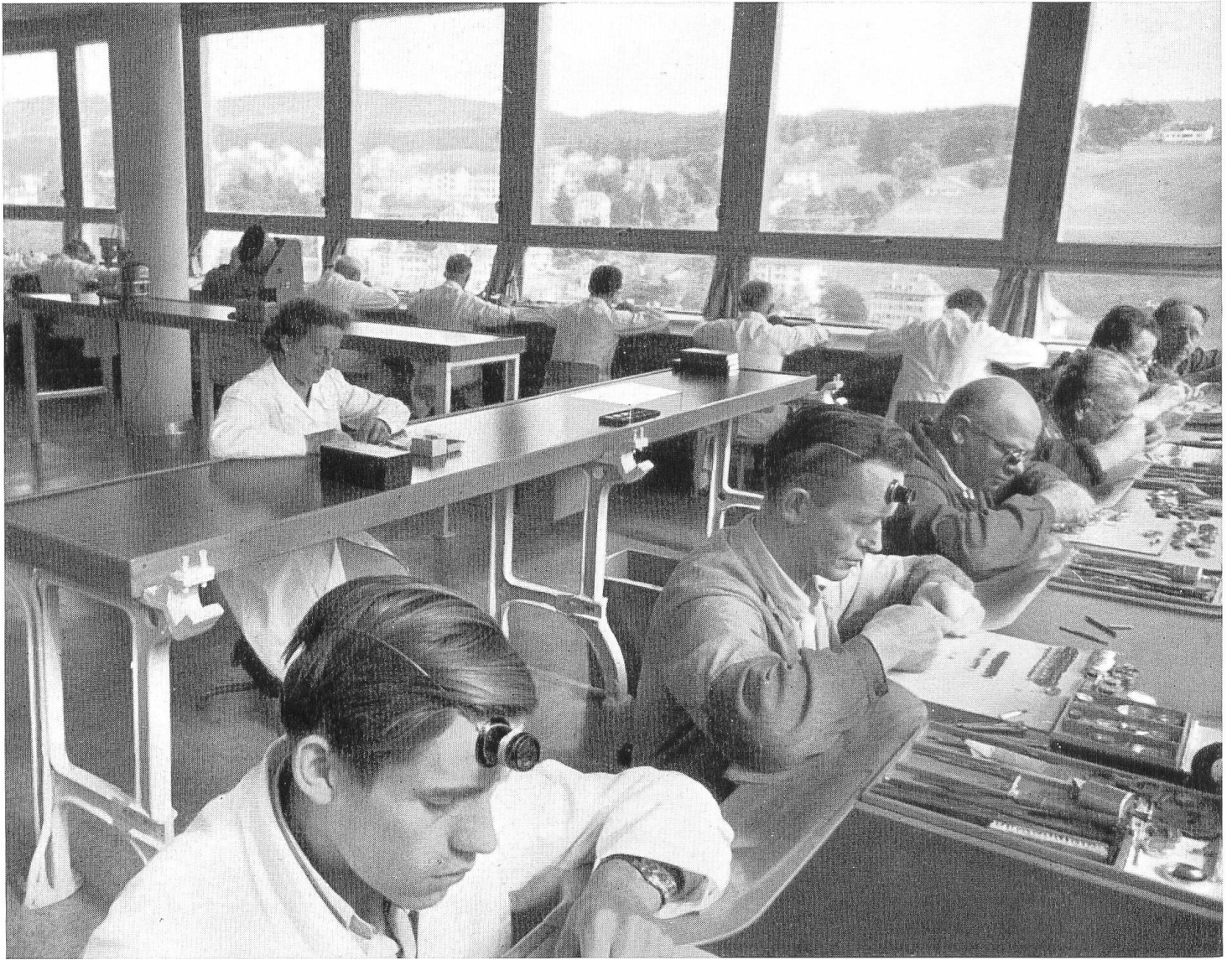
Passport issued by the Mayor of Le Locle, Monsieur Jean Henry Vuagneux, to Isaac Richard, one of Daniel's sons, to enable him "to betake himself to divers provinces of France". The Mayor adds that "M. Richard is an honourable fellow of good character and that the air is pure and healthy in our regions".



The romantic picture painted by Auguste Bachelin (1868), and showing the young Daniel Jean-Richard meeting the horse-coper in his father's forge. — Neuchâtel Art Museum. — The very popular painting has largely helped to establish the legend of the "talented young blacksmith", though Daniel JeanRichard was in fact a goldsmith and watchmaker.



Statue of Daniel JeanRichard, erected at Le Locle in 1888. In this work, which still appeals to the young people of the country, the sculptor Iguel, like the painter Bachelin, took his inspiration from the legend of the young locksmith and blacksmith, whose features are those of the artist's daughter. Thus ends the story of the old goldsmith and master watchmaker of Les Monts-du-Locle, the founder of the Jura watch industry.



A modern watch factory as described by C. F. Ramuz: "It resembles a modern school-building, in which everything works cleanly and silently, generally by electric power, with few noisy machines, but a host of tiny appliances turning quietly on the corners of the workbenches, where the watchmakers sit facing the splendid forest of fir-trees or a meadow with its spring of pure water."

take up smuggling, in spite of the great profits he might have made by it; but he had kept the natural frankness of the watchmaker. In the course of an audience he had granted to Moser, a Russian minister asked him how, in his opinion, the smuggling of watches could be stopped. Without the least hesitation, Moser replied with his customary coolness: "Your Excellency, it would be no use setting up gibbets for smugglers all along your frontiers. There is only one thing to be done: cut down your import duties!" Taken aback and amused by this unexpected advice, the minister was nevertheless wise enough to follow it. The duties were reduced by three quarters. — If only the customs and treasury authorities would take this as a precedent today, both in the Old World and the New!

Quite apart from prohibitive import duties, periods of internal depression and constant foreign competition, the Swiss watch industry is exceptionally liable to suffer on account of economic fluctuations and crises occurring outside Switzerland. 95 % of its production is exported, whereas this proportion is only about 60 % for chemicals and 45 % for machines. The figures speak for themselves. Owing to the great depression that followed the First World War, Swiss watch exports fell from 328.8 million francs in 1920 to 169.3 millions in 1921. Similarly, owing to the American financial collapse of 1929 and the unemployment that prevailed throughout the world in the 1930's, watch exports fell from 307.3 million francs in 1929 to 233.5 millions in 1930, 143.6 millions in 1931 and 86 millions in 1932. Then they rose gradually, reaching 241.4 millions in 1938, after which came the great boom following the Second World War.

The capricious demands of fashion, such as the introduction of the wrist-watch (which now represents more than 90% of all the watches manufactured in Switzerland), have sometimes dealt a mortal blow to one or other of the special branches of the watch industry, while at the same time favouring others. Certain technical innovations, such as the machine production of rough movements, the application of the American principle of interchangeable parts, and other more recent developments, have upset and revolutionized production. Whether we like it or not, we must sooner or later conform to this irresistible trend of our time, if only to counteract the general shortage of labour and the effects of negligence, especially on the part of the younger workers.

In the face of these manifold and increasing difficulties and the gradual

realization of the drawbacks of the old system of commercial and industrial liberalism, certain tendencies became apparent, though they proved slow, costly and difficult to follow. We are thinking especially of the following points:

- Professional training, of apprentices at first, in the factories or in special professional schools. Such institutions were founded first of all at Geneva (1824), then at La Chaux-de-Fonds, Le Locle and St-Imier (1865-1867), Bienne (1872), Solothurn (1884), and finally at Le Sentier (1901). The purpose of these schools of horology or technical colleges, which are equipped with the latest machines and apparatus, is to train the future “cadres” of the watch factories. Their very thorough theoretical and practical training enables them also to turn out designers and technicians, as well as specialist watchmakers. There are also centres of highly-advanced training and research like the University of Neuchâtel, which has courses for horological engineers, and the Swiss Laboratory of Horological Research, also at Neuchâtel. These institutions remain in close contact with the watch industry and the great horological schools.
- Centralization of the industry. Owing to the growing development of mechanical methods of production, the old workshops gradually gave way to the watch factories, while the old independent watchmakers sought employment in larger concerns. In reality, the machine did not put the watchmaker out of work; it caused him to work elsewhere. Though it was not always realized, the introduction of mechanical methods brought a slow change in the relations between the individual and the community; it tended to substitute great new production complexes for the old groups formed by the craftsmen and their families.
- The foundation of trade-unions and employers’ associations, which are obliged to negotiate with one another to find a reasonable basis of agreement.
- Co-operation between the various employees’ associations and trade-unions, with or without the assistance of the State as a third party, to safeguard the general interests of the watch industry as a whole.

Thus, despite a “sea of troubles” and the fascinating, inhuman world of the machine, we come back in the end to the individual man, who is ultimately responsible for the efficient operation and development of this important national industry.

STEADY PROGRESS OF THE WATCH INDUSTRY

To conclude our outline of Daniel JeanRichard's life and work and the beginnings of the watch industry in the Neuchâtel Jura, we should like to throw some light on certain particular aspects of the subject, giving a few complementary details.

The year 1750 was a landmark in the history of the watch industry in the Principality of Neuchâtel, for it was about this time that specialist workshops were springing up in large numbers. According to the census taken about the middle of the eighteenth century, there were at Le Locle 41 watch- and clockmakers, as well as 43 specialists (casemakers, enamellers, springmakers, chainmakers, engravers, etc.). At the same time, La Chaux-de-Fonds had 68 clockmakers, 61 watchmakers and 37 specialists. At that time, the Neuchâtel Jura was producing watches of a popular type, with silver or pinchbeck cases. The annual production of these two watch-manufacturing centres amounted to about 15,000 pieces. — For the sake of comparison, it may be added that the watch industry was flourishing at that time at Geneva, where it gave work to some 4,000 operatives of both sexes. The annual production amounted to 200,000 finely-ornamented and well-made watches.

Once started, the movement was never to stop, despite the vicissitudes and crises that confronted the new industry of the mountains. The number of gold and silver watches produced in the two localities we have just mentioned rose from 15,000 in 1764 to 160,000 in 1836 and 280,000 in 1846. The total production of the entire Canton of Neuchâtel was 307,000 in 1891, 967,000 in 1901 and 1,093,825 in 1911.

The number of watchmakers employed in the Canton of Neuchâtel shows a similar increase. From 464 in 1752, it rose to 2,177 in 1781, 3,929 in 1798, 5,163 in 1830, 10,374 in 1849, 14,629 in 1888 and 18,645 in 1905, after which it dropped to 15,377 in 1950.

According to certain estimates, which are rather difficult to verify, the Canton of Neuchâtel now accounts for some 30 % of the total exports of Swiss watches. La Chaux-de-Fonds alone is said to manufacture about two thirds of the watches produced in the Canton, thus fully deserving its proud title of "Capital of Watchmaking", which appears all the more significant when one remembers that Switzerland produces about 60 % of the world's watches.

Thanks to the close co-operation that prevails between its various sections, the Swiss watch industry continues to occupy the leading position on the world market. If it is to hold its own and to go forward in the face of heavy competition and endless difficulties, the Swiss watch, like a beautiful woman, must have an imposing series of attributes: it must be ultra-flat, elegant, aristocratic, rustproof, waterproof, antimagnetic, shockproof and absolutely reliable.

According to the statistics available for 1951 and 1955, the total value of Swiss horological products exported, in millions of francs, was distributed over the five continents as follows:

	1951	1955
Europe	286.0	331.2
Africa	54.1	75.8
Asia	171.9	191.9
America	466.3	452.7
Oceania	32.1	25.4
Total	1,010.4	1,077.0

In the last few years, horological products have made up about one fifth of the total exports of Switzerland. This shows the importance of the watch industry in our national economy.

Despite all the obstacles that have stood in its way, the Swiss watch industry has always managed to overcome its difficulties. Its triumphant progress continues throughout the world.

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