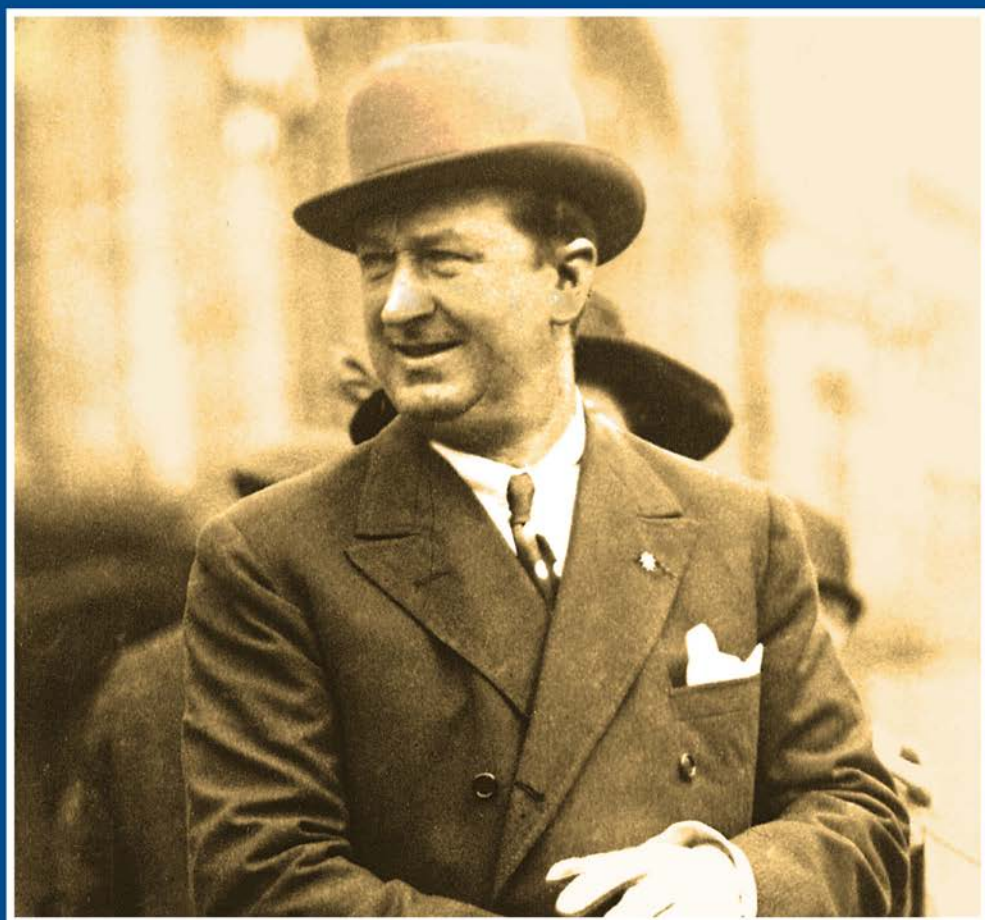


BUGATTI

THE DESIGNER

By Barry Eaglesfield



THE INVENTIONS, IDEAS, THOUGHTS &
FOLLIES OF ETTORE BUGATTI INCLUDING
CARS · BOATS · TRAINS · PLANES
HORSES & CARRIAGES

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BUGATTI - The DESIGNER

THE INVENTIONS, IDEAS, THOUGHTS AND FOLLIES
OF ETTORE BUGATTI

BY
BARRY EAGLESFIELD

Barry Eaglesfield - the well known Bugatti enthusiast and historian has produced a new book on Ettore Bugatti covering a variety of his designs and inventions.

Barry owns a large library of information that includes over a hundred photograph albums and articles (four thousand pages in all) devoted entirely to Bugatti and from which he was able to write "The Bugatti Book" in 1953. This book ran for four editions, is still sought after and a useful reference source with the added bonus of a Bugatti car maintenance section. He returned to his archive in 1996 to produce the Bugatti Replacement Parts book and has also written numerous articles relating to all things Bugatti and the Bugatti dynasty.

A past owner of Bugatti Types 37, 40, 44 and 46 he has driven most Types over the past 70 years including the 35B, 59 and the single seater Indianapolis car to name the most interesting.

He has been a committed member of the Bugatti Owners Club and Vintage Sports Car Club since 1946 and the American Bugatti Club and Bugatti Trust since its inception.



A native of Cumberland, he worked for Shell, VW., Cummins Engines and lastly for a member company of the John Brown Group on oil and petrochemical projects in the Middle East and now lives in Kent.

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FOREWORD

There have been so many books on Bugatti cars in the 65 years since the death of Ettore in 1947 that it is surprising that none have been dedicated to the subject of his inventions. W F Bradley in his biography gives the number of Ettore Bugatti's patents alone at 1000 which may be approximately correct. He was also a prolific sketcher of things mechanical and several hundred original sketches have survived in the Bugatti Trust. Many of his ideas relate to motor vehicles but the range is more extensive than that. The subjects include aircraft design, steam locomotives, ships hulls', bicycles, machine tools, even venetian blinds and a fishing reel with powered drive. Part of the enjoyment in reviewing them is to criticise and admire his lateral thinking as many were surely impractical.

Ettore Bugatti was born in Milan 1881 at a time when the traditional skills of the artist embraced those of the mechanic and indeed for his early training his father Carlo decided he should follow in his footsteps. He was sent to the Art Academy at Brera to study sculpture under Prince Paul Troubetsky. Ettore's interests however were in mechanical design and in 1897 he joined the cycle makers Prinetti and Stucchi. So his career as a motor vehicle designer and manufacturer began. His first patent was taken out in 1904 when he was living in Strasbourg, then part of Germany. It is arguable whether his early artistic training continued to influence much of his subsequent work as is generally believed today. However what is clear is that his drafting skills were unquestionable.

The Bugatti Trust whose objectives are to encourage and support young engineers and promote innovative design is pleased to be associated with Barry Eaglesfield's work and he is to be congratulated for his diligence in rectifying the omission. Editorial assistance has been provided by Richard Day, Curator of the Bugatti Trust and together they have been able to assemble an interesting selection of material collected from a number of sources including the Bugatti Trust.

There are those who consider the iconic Bugatti brand as no more than a work of deco art commanding record values at auction. This book should prove to be a revelation to them. Engineers and designers who know more of the range of his achievements should find it an interesting reference work. For both it will prove a fascinating study of an extraordinary personality.

H R G Conway

PREFACE

This book is about Ettore Bugatti's extraordinary mind devoted to a multitude of inventions, designs, modifications, innovations, ideas, hobbies and follies.

An immense amount has been written about his career in the automobile world and a conglomeration of books has been published on that subject. The object of this publication is an attempt to try and cover a very diverse and wide volume of work in the design field and includes Cars, Railways, Marine, Aircraft and Machine Tools.

It should be remembered that many of the designs are of considerable age and have now been superseded – but nevertheless they were innovative at the time and many Patents were approved. Indeed, over a thousand!

It could be said that each of the sections in the book covering Marine, Aeronautics and Railway activities are important enough to be extended into publications in their own right. Hopefully, the list of Sources given in the book may encourage the reader to study these subjects in greater detail.

At this point it is pertinent to understand that the gathering of information to include in this book started some four years ago. During this time it has received the full support of Hugh Conway (Chairman of The Bugatti Trust and Museum) which has been much appreciated, as without it this book would not have seen the light of day. Particular praise and grateful thanks go to the Curator of the Trust – Richard Day – a positive mine of information on all matters Bugatti. A great deal of the information, articles and photographs were provided by his diligent work and which constitutes a high percentage of the contents of this book.

Grateful thanks to Rebecca McGann who took over the massive task of re-typing the manuscript to achieve a standard typeface – a tour de force indeed!

Finally, our thanks and appreciation for the excellent support and advice provided by the Publisher, John Dowdeswell and the ever-helpful manager, Mrs. Barbara Cleveland of the firm Brooklands Books Ltd. We should mention here the above firm's excellent publication entitled "Bugatti – Type 10 to Type 251" which describes the different cars produced.

Details of The Bugatti Trust are given in Appendix C and staff members are listed in Acknowledgements prior to Appendices.

Join The Bugatti Trust and receive the always interesting Bugatti Trust Newsletter – 30 pages of technical and general news.

BARRY EAGLESFIELD

INTRODUCTION

GENIUS – dictionary definition

*“Natural ability and aptitude.
The special endowment which fits
a man for his particular work.
Intuitive and extraordinary talent
for imaginative creation, original
thought and invention.”*

However, one might in Ettore Bugatti's case add eccentric, stubborn, intellectually arrogant! But is that not part of genius?!

The catalyst for this book was born by reading a letter published in Bugantics (the Bugatti Owners' Club magazine) in 1995 and written by Les Mathews Jnr of Strasbourg – the well known Bugatti enthusiast and author who sadly died, age 83, in 2007.

It seemed such an interesting insight into Ettore Bugatti's lateral thinking that the letter is therefore printed here in full – see over.

Further correspondence with Les Mathews in 2002, elicited the fact that the Retractor was still being manufactured. An example of the retractor was purchased by Hugh Conway (Chairman of the Bugatti Trust) in May 2004 specifically to be included in an exhibition put together by the Bugatti Trust for International Rally visitors that June.

The hope is, gentle reader, that you will enjoy looking at an overall picture of Ettore Bugatti's constant flow of design work, inventions, ideas and follies on such an amazing variety of subjects – some major, some minor.



BUGATTI IN THE OPERATING ROOM

Les Matthews

We all know how ingenious and inventive Ettore was, but how many of us know that one of his unpatented inventions is currently used in hospital operating theatres to separate surgical incisions?

I first heard about the existence of this instrument from Roland Wagner, chairman of the Foundation Bugatti and past president of the Chamber of Commerce and Industry of Strasbourg and the Lower Rhine. Wagner explained to me one day that he had spoken many years ago about Ettore with Professor Rene Leriche, a celebrated surgeon and department head at the Civic Hospital in Strasbourg. During that meeting Leriche said to an assistant: "Charlie, go and get the Bugatti". Charles left, returning with a pair of strange instruments, looking something like sickles, that were like motorcycle mudguards turned inside out, although flat. When Wagner asked what the instruments were used for, Leriche replied that he separated the sides of the incision of his patients with a pair of these instruments when he operated! Ettore, who went hunting with Leriche, had been told by him that the previously used instruments with a scissor action could not be cleaned correctly. Le Patron therefore invented a useful instrument, easily cleaned, that opened the incision better than 'scissors'.

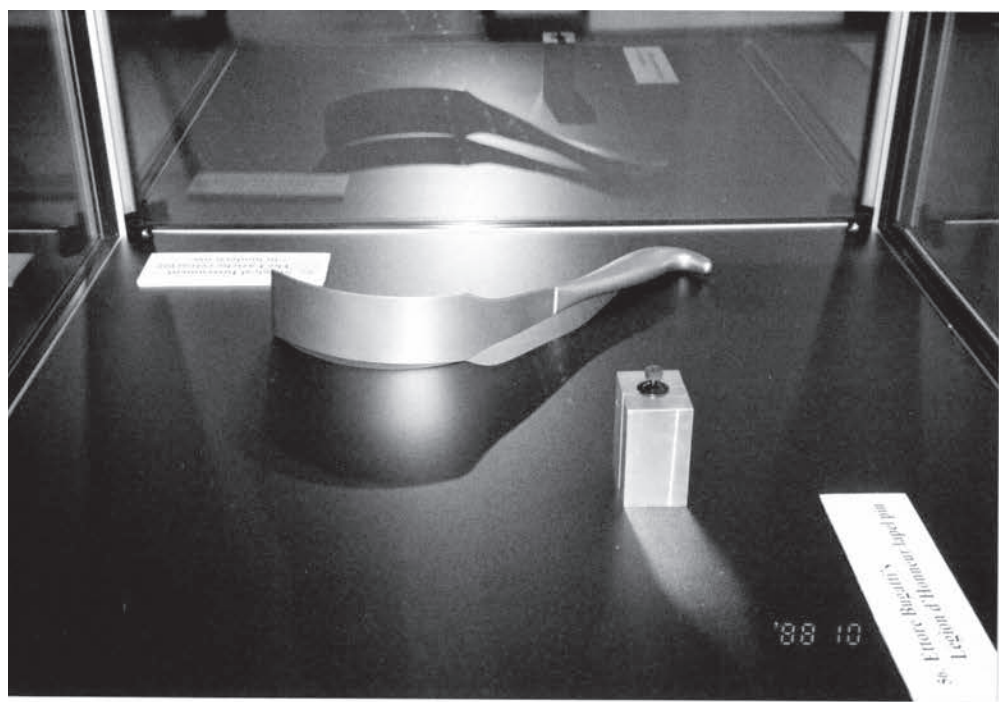


Les Matthews and the Bugatti operating instrument.

Since Leriche had died in 1955, I decided to try to determine whether any of these instruments were still in existence and in use. A friend, Dr. Pierre Buchser, asked around among his colleagues and he ultimately invited my wife and me to attend a lecture to be given by Professor Christian Meyer, a department head at the Centre Hospitalier Universitaire at Hantepierre, Strasbourg, at a dinner meeting of the Kiwanis Club. (Rotary, Lions and Kiwanis Clubs are quite active in France). Professor Meyer discussed his speciality, a type of micro-surgery he called laparoscopy. He also brought with him one of the Bugatti instruments he currently uses during traditional surgical operations, since his micro-surgery proceeds through small holes rather than through linear incisions traditionally made.

The instrument, made both in France and in Germany, from a single piece of solid stainless steel, was half a circle of metal about one and a half inches wide and one eighth of an inch thick, with a handle grooved for fingers of the hand using it, and with a smooth end turned slightly outward.

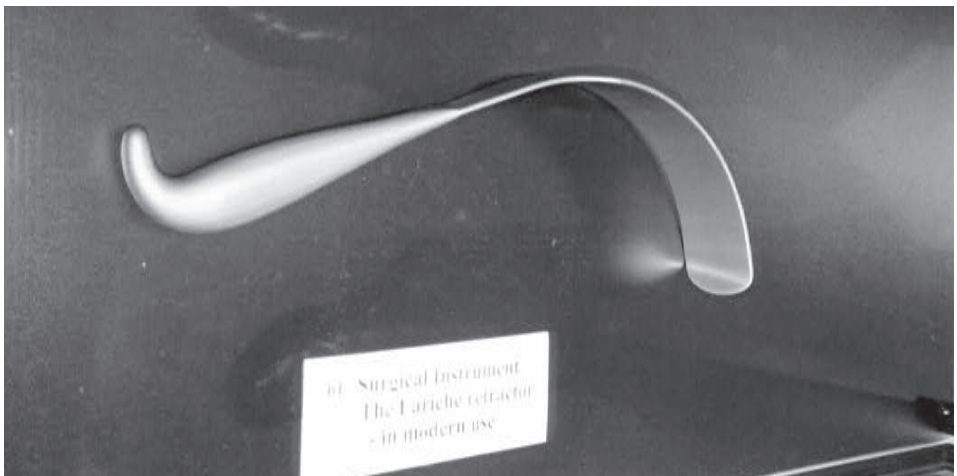
Two instruments are used to separate the incision, one on either side. After the surgeon



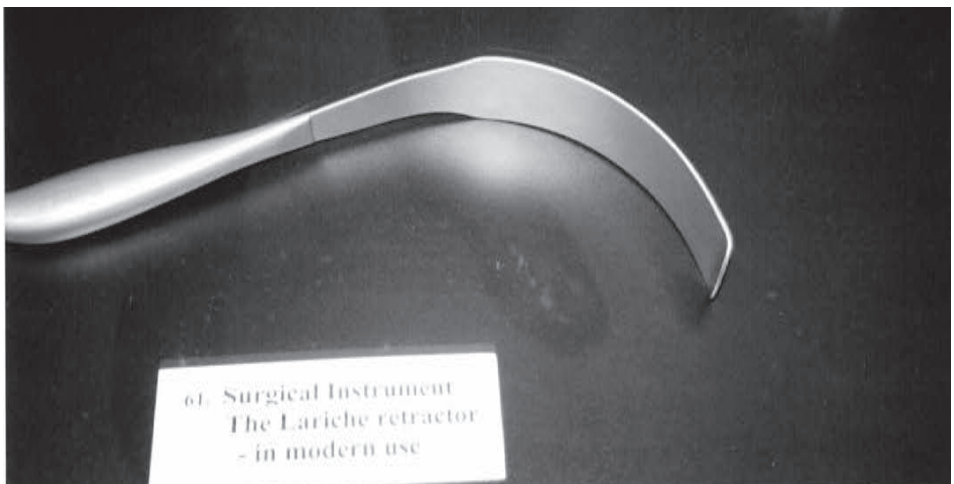
has made the incision, and pulled back the skin of the patient, he passes the instruments to an assistant who holds them to maintain the opening at the desired degree, thereby permitting the surgeon to perform the operation.

Professor Meyer said that the instruments come in two widths. The narrower, about one and a half inches, is called the "Leriche opener" and the wider, about two and a half inches, he simply called the "Bugatti", as did Leriche forty years ago. Meyer explained that the instruments are currently listed in surgical equipment catalogues from both France and Germany and are sold throughout the world. He said numerous surgeons used them, and he himself has six or seven, to permit their sterilization after use.

I was delighted to learn all about this and I took several pictures of the instrument. I was pleased to realize that Ettore actively lives on in the world of modern medicine.



The Bugatti surgical instrument on display in the Bugatti Trust.



L.G. Matthews, Jr. - a short bio

L.G. Matthews, Jr. was graduated from Harvard Business School in 1952 with an MBA. His business career was with General Motors, largely as an executive in Europe. His interest in Bugatti resulted from assignments in Strasbourg, where he became acquainted with the Bugatti culture in nearby Molsheim, home of the factory where Ettore made his cars.

Although an American, in 1991 he was elected president of the Enthousiastes Bugatti, a club devoted to the celebration of the work of Ettore Bugatti, with its headquarters in Molsheim. The club sponsors an annual Bugatti Festival rally, attracting some sixty Bugattis in 2002 and 2004. When club president in 1991, Les Matthews was instrumental in showing the Seydoux and the Lauren Atlantics as part of a historical perspective of Bugatti milestones that was presented on the grounds of the Messier-Bugatti factory in Molsheim on September 15, 1991 on the 110th anniversary of the birth of Ettore. This presentation included all major cars created by Bugatti, starting with the Type 10 grand prix prototype of the Pur Sang of 1909 call the "bathtub" and concluding with the Type 73A prototype, Ettore's last car. This perspective constituted the most complete showing of Bugattis ever assembled anywhere, and the presentations of two Atlantics side-by-side constituted a world premier.

Les Matthews is the author of numerous historical articles about Bugatti published in the bulletins of the American Bugatti Club, the Bugatti Owners Club, the Club Bugatti France and the Enthousiastes Bugatti. He interviewed numerous individuals who were actively connected with Ettore and his work.



L.G. Matthews, Jr.

SECTION 1

THE BUGATTI HERITAGE 1676-2005

The Bugatti Family

Family Tree

Biographies -

Giovanni Luigi Carlo Bugatti

Carlo Bugatti

Ettore Arco Isidoro Bugatti

Rembrandt Bugatti

Gianoberto Carlo Maria Augusto Bugatti

THE BUGATTI FAMILY

Much research has gone into the extension of the Family Tree – see page 16.

The excellent original was compiled by the late Hugh Conway and covered the years from Giovanni Bugatti (born 1823) down to the present day.

We have now been able to extend this back to 1676 and although date of birth is shown it has not yet been possible to discover date of death.

It should be noted there is an additional son added to Carlo Bugatti's family – sadly not long lived.

The surname Bugatti appears in three important nuclei, one in Lumezzane in the Brescia area, one in the Milan area, one in the Ancona area. Bugatti is extremely rare and appears in the Genoa area. Traces of these surnames appear in the Brescia area since the 12th century some "Heredes Petri Bugatti" (ie heirs of Petro Bugatto) are named. In 1200 in the eastern extremity of Provence, at the border with Italy we find a legal document: "This document was done on the second day of the Ides of June, 1277, during the rule of Philip, etc, etc. Witnesses of this are Armelis of the Bugato family etc, etc. Arnaldo of the Bugato family."

In 1400 in Milan, the portrait painter Zanetto Bugatti is employed by Count Francesco Sforza and decorates, among other things, the Chapel of the Relics in the Castello of Pavia.

The family Bugatti had a tradition of intense creativity and previous generations had been artists and the family, it would seem, could claim descent from the Milanese painter Zanetto Bugatti and later the 17th century engraver Gianni Francesco Bugatti.

Then as now, Milan, capital of Lombardy, is the north's largest city. In the nineteenth century, this most European of Italian communities was to expand dramatically through the growth of its commerce and industry. Milan had a population of 320,000 in 1880, which had nearly doubled to 560,000 in 1906. This followed Austria's cession of Lombardy in 1859, after the Battle of Magenta, that had paved the way to the Italian alliance of two years later.

In Milan, avant-garde activities during the 1860s and 1870s were the preserve of a movement called 'la scapigliatura' ('dishevelledness', 'untidiness') which included writers, musicians, sculptors and artists. Their meeting place was the Famiglia Artistica, founded in 1873, where exhibitions and lectures took place.

Giovanni Luigi Bugatti – forefather of the family – appeared for the first time in the Milan art scene in the middle of the 19th century.

It is not difficult to see a common link between Luigi's works except for the surname of

their creator. It would be impossible for any critic to postulate a 'Bugatti style'. On the other hand, four generations of the same family are likely to have a degree of continuity in their mental attitudes, and what one hopes to find in their various enterprises is a shared motivation. Then it may be possible to define a 'Bugatti identity'.

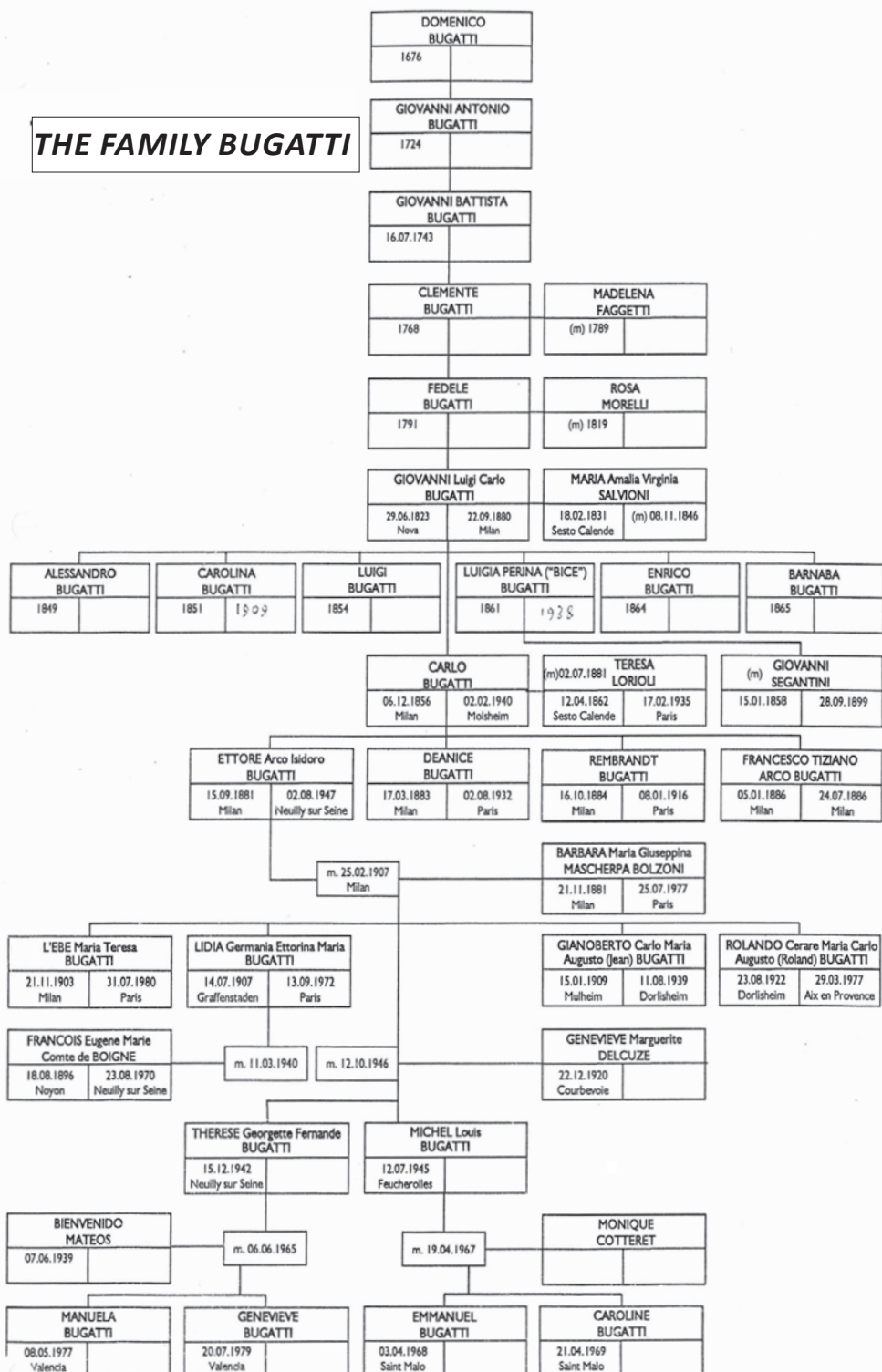
This is not a coincidence. The achievements of Carlo Bugatti and his sons Ettore and Rembrandt collectively represent an attitude to art that developed round the turn of the century. It is an attitude where no great distinction is drawn between fine and applied art, where the handling of materials is as important as any aesthetic philosophy, and where the solution of problems becomes as significant a part of the creative process as personal expression.

Throughout history there have been many generations of artists within the same family in many artistic disciplines; the Bach family and the Strauss family in music; the Barrymore, O'Neill and the infamous Booth families in the theatre; the Caracci, Tiepolo and Breugel families of painters. What separates the Bugatti from most of the other artistic families is that each had a different medium for expression.

Bugatti is synonymous with power, speed and inventive spirit, but also with artistic design, elegance and creativity. It is the impressive works of four generations of this family, which has made the name Bugatti a legend. Anyone who intends to get to the root of the Bugatti myth, must reach far back into the family history – 150 years to be exact.

There is, out of interest, a Battista Bugatti who was executioner to the Pope in Rome and in a lifetime dispatched 618 people! A full history exists of his life and works. He died at the age of 85 in 1869. A distant relative??!

THE FAMILY BUGATTI



[COPYRIGHT] Compiled by the late Hugh Conway, 1960
Extended and amended by Barry Eaglesfield, 2005

SHORT FAMILY BIOGRAPHIES

This book is primarily concerned with Ettore Arco Isidoro Bugatti.

However the artistic life really begins with his grandfather Giovanni Luigi Carlo Bugatti, then handed down through Carlo Arco Bugatti to Rembrandt and Ettore thence to the latter's son 'Jean' Bugatti (see Family Tree).

Here follow biographies of the above four men. The literature listed in the Appendix gives fuller details to their lives.

Undoubtedly there is a multitude of books covering every aspect of the Bugatti family from Carlo Bugatti to present day. However the exception being any information or research into the life of Giovanni Luigi Carlo Bugatti and his forebears.

The following research project started when the author visited the beautiful Sladmore Gallery in London (see address in Appendix), which devotes much of its space to the works of Rembrandt Bugatti the well-known sculptor (animalier). Indeed the variety and beauty of the exhibits leaves one breathless and a visit to the Gallery is to be recommended.

Having introduced myself to Edward Horswell and been given, most generously, a signed copy of his marvellous book on the life and work of Rembrandt Bugatti the conversation turned to Bugatti matters in general. It so happened that soon after this meeting, a gentleman named David Watkins visited the Gallery – a keen Bugattiste. A discussion ensued with Edward Horswell regarding the possibility of carrying out some research onto the life and work of Luigi Bugatti.

This information was relayed to Hugh Conway (Chairman of the Bugatti Trust) to ask his advice as to who might be interested in carrying out this work. The author of this book was approached and readily agreed. The work has been sponsored by David Watkins and indeed without his help and enthusiasm the project would not have flourished and to him we owe a debt of gratitude.

We acknowledge here the good work involved in Italy by Francesco Guasti of the Italian Bugatti Club, which has been most helpful and of great importance – including visiting the birthplace of Luigi Bugatti, together with David Watkins.



Ettore Arco Isidoro Bugatti.

GIOVANNI LUIGI BUGATTI 1823 – 1880

Giovanni Luigi Carlo Bugatti – a man of many parts and interests.

It is difficult to sum up the fact that his work was many faceted – architect, sculptor in wood, attracted by mechanics, interested in science, manufacture of wooden artefacts and metal (brass) items, joiner (in Italian – Falegname).

His main activity might well have been the carving, in wood, of mantelpieces and chimney-pieces (reredos).

It would seem that one of his activities was the manufacture of wooden and later metal, handles for agricultural tools (forks, spades, rakes, etc) and for more specialised tools used in industry – a profitable line in view of work being by hand with the tools fitted with specialised handles.

Luigi Bugatti was born in Nova (which was then about 15 miles due north of Milan) on 29th of June 1823.

He married Maria Amalia Salvioni (born in Sesto Calende on 18th of February 1831) on the 8th of November in 1846,

They started married life in Nova then soon moved to Paderno, where he had a workshop. After some time they moved again to Dergano and finally to Milan.

They had seven children (five boys and two girls) as can be seen on the Family Tree chart.

We know that Luigi Perina (though always called “Bice”) married Giovanni Segatini the well known artist.

Later in life Luigi had access to a forge/foundry in Milan and through this outlet produced various brass fittings – handles, door hinges, drawer and door handles plus some brass ornaments.

However the idea of making a machine producing perpetual motion was uppermost in Luigi's mind.

Indeed we have knowledge that Ettore stated this more than once – although in fact, he never met his grandfather.

This project was indeed a path many others have trodden to no avail and at great cost in time and money.

Perhaps in some old garden shed in Nova there lies a model of such a machine – probably one of many experimental ones that Luigi constructed. Who knows?!

Whilst carrying out research the relative photocopied pages carrying the name of Bugatti were procured from the Milan telephone directory – numbering 42 persons.

As a trial 20 names were written to (in Italian) asking for any family history on Luigi Bugatti and indeed on the Bugatti family in general. Enclosed with the letter was a copy of the Bugatti Family Tree as listed in this book.
Sadly not one person replied!!

LIST OF SOURCES ON GIOVANNI LUIGI BUGATTI

Museums in Milan:

Bagatti Valsecchi

The Museo Nazionale della Scienza e della Tecnica

The Civia Gallerio A'arte Moderna

Malcolm Haslam

S Skinner

R Light (B.O.C.. Photographer and Archivist)

F Guasti, Chairman, Bugatti Owners Club Italiana

Association of British Sculptors

Gerald Batt, international architect

Barrie Price

Richard Day, Curator, The Bugatti Trust

Prescott Hill, Gotherington, Glos GL52 9RD

Norbert Steinhäuser

Bugatti Club of France

Italian Embassy

Italian Tourist Office – UK

Mrs Marion Kite, Victoria and Albert Museum

Hugh Conway, Chairman, The Bugatti Trust

Edward Horswell, Sladmore Gallery

32 Bruton Place (off Berkeley Square) London W1J 6NW

CARLO BUGATTI 1856 – 1940



Carlo showed signs of great eclecticism which earned him the name “Juene Leonardo”.

First a student of the Scuola di Bella Arti in Milan, then in Paris, he showed a prolific genius and great versatility, worked unceasingly and excelled in various fields; sculpture, landscape and portrait painting, engraving, architecture and cabinet-making. It was in the latter that he was to give the maximum expression to his creativity and he made his first steps under the guidance of the cabinet-maker Mentasti in Milan, where he and his sister Bice met the not yet famous artist Giovanni Segantini.

In 1880, Carlo married Teresa Lorioli “blonde and slim, with delicate features and a vivacious and brilliant character”, who bore him 4 children – Dejanice, Etore, Rembrandt and Francesco.

He also turned to a variety of works including:- designer and maker of works in

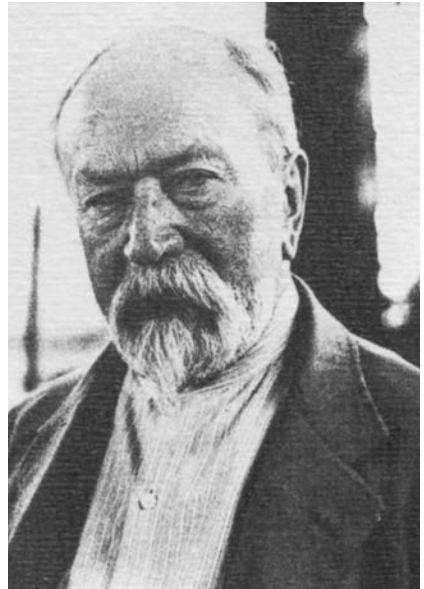
silver, painting, sculpting, maker of stringed instruments similar to guitars – one with 30 strings, and a bicycle! A man of many talents.

However, it is as a designer and producer of exotic furniture for which he is best known. Since a revival of interest in his work began in the 1960s, Carlo Bugatti has come to occupy a position of considerable significance in the history of European design. He is the only Italian of his generation who broke with the prevailing historicism of the nineteenth century and sought to create objects that did not directly imitate styles of the European past; he drew instead from more exotic sources – notably Islamic and Japanese art. Moreover, unlike many other European furniture designers working around 1900, he did not use the dramatic whiplash line that distinguishes the decorative arts of the period and generally goes under the rubric of art nouveau. Bugatti developed an extensive repertoire of furniture forms, and, since Italian furniture makers utilised handcraft production techniques right through the nineteenth century, he was able to experiment with a variety of forms and techniques. After establishing a basic formula for a furniture design, he systematically varied it with small changes in functional elements or surface patterns, creating a series of related pieces. As a result, he appears to have produced more different designs than any of his contemporaries.

A certain amount of documentation survives regarding Bugatti's Milanese furniture, some of which was signed and some of which was included in exhibitions that were covered in contemporary publications. For example, several drawings of his pieces in an exhibition of Italian art held in London in 1888 appeared in British publications at the time. From these sources it is possible to deduce the elements of Bugatti's mature Milan style. His furniture often included Islamic elements, such as pointed or onion-shaped arches. Surfaces were decorated with geometric marquetry, chiefly of wood and metal, or with more freely designed white metal inlays of Japanese inspiration. Also derived from the Japanese were animals and plants, painted in brown monochrome on panels of vellum glued to the wooden carcasses of his furniture. Objects were further enriched with silk fringes and cords and with round metal plaques or rectilinear strips of metal with relief decoration.

Milanese nouveau designer Carlo Bugatti's work is a shock to the senses, medieval, exotic (Moorish, Japanese) and wholly different than the Parisian/Belgian, Anglo-American or Austrian/German Secessionist anti-industrial design styles of the late 19th/early 20th centuries. He tended to work with walnut, ebony, ivory, vellum (often worked with gold or watercoloured dyes and then shellacked), copper, pewter, brass and other "true" materials favoured by Arts and Crafts artists. His metalwork is characteristically stamped. Bugatti's company was aptly named C. Bugatti & C., Fabbrica Monili Artistici Fantasia.

Carlo is in 1902 at the summit of his career and he obtains the honour of the diploma of the first international exposition of the Decorative Arts of Torino (Italy). In 1904, he leaves Milan for Paris that had attracted him for many years. He puts himself then to work on silverware pieces and jewelry to the motifs of animals and of sterilized insects. He establishes himself about 1910 in Pierrefonds (in a house called "villa La Roulotte") in the Oise French department, where he befriends Clément Bayard, the well-known French automobile manufacturer. When the war of 1914 bursts, Clément Bayard, mayor of the town in the area, leaves Pierrefonds to transform his automobile factory into armament manufacture and consigns the city hall to Carlo Bugatti. In 1918, after the return of Clément Bayard, Carlo Bugatti divides his time between Pierrefonds and Molsheim, where lives his son Ettore. He lived in Ettore's house from 1937 and died there in 1940.



Many examples of Carlo's furniture consist of visually powerful forms and shapes. Cuboid or egg-shaped, large circles, strong straight or curved diagonals may be emphasized much more than the actual construction of a piece. Joining techniques and cabinet making details are disguised whereas the surfaces are expressed with rich textural treatments and inlaid or applied decorative detailing.

ETTORE ARCO ISIDORO BUGATTI 1881 – 1947

Ettore received his education at the Brera Academy and in his father's workshop, having the opportunity both at home and at school to meet the best artists and intellectuals of that period.

His father had hoped that he would follow an artistic career, but, unlike Rembrandt, due to a strange quirk of fate, he soon revealed a strong tendency towards mechanics; whilst still very young, he made some fundamental modifications on an engine-powered tricycle manufactured by the engineer Prinetti and by the industrialist Stucchi.

In 1898, the latter invited him to be an apprentice at his factory. A short time later, after having succeeded in overcoming the opposition of his father who, on the other hand, wished to see him become an artist, Ettore accepted the offer.

Ettore raced on tricycles, giving vent to his creative passion. He continually perfected his own creations, basing their own evolution on "simple observation", which was always the key to his activity; from the races he entered, in fact, he made many observations and collected ideas for the perfecting of his vehicles. Soon, the 3-wheelers were no longer sufficient for him and he began to think of 4-wheelers.

He designed a 1-seater, 4-cylinder vehicle which he then began to work on; but after a few initial problems, his employers became discouraged.

Ettore was not to be stopped, however. He found other people willing to finance him – the Count Gulinelli of Ferrara – and in 1901, the model was ready. It was a single seater weighing 650 kgs, with a 4-cylinder, water-cooled engine, chain drive, 4 gears plus reverse, and a maximum speed of 60 km/h.



This little building was the very first beginning of the Molsheim factory where the early Bugattis were built.

He exhibited the vehicle at the first "Mostra Internazionale de Allevamento e Sport" in Milan in 1901, winning the Grand Prix and a medal from the French Automobile Club.

During the next few years he married Barbara Mascherpa Bolzoni, an opera singer, who bore him 4 children: L'Ebe (1905) who was to become a writer, Lidia (1907) who became a painter, Jean (1909) and Roland (1922).

The Alsatian industrialist, Baron De Dietrich offered him a place

in his factory and made a 7 year contract with Ettore which carries his father's signature as he was not yet of age.



Bugatti and his car for the 1909 Prince Henri Cup

The following year a range of De Dietrich-Bugatti cars was presented, 4-cylinder, 16, 24 and 50 HP vehicles.

The 50 HP racer was entered, in 1903, for the Paris-Madrid; it was not admitted, however, due to an issue of visibility; this criticism proved to be unfounded, but was based on prejudiced ideas regarding the lower driving position which Ettore had studied for the driver.

In 1904, the De Dietrich company ceased its production of automobiles and released Ettore from the contract. Ettore immediately set out to find new partners, and after a short time went into partnership with Emile Mathis of Strasbourg, "Societe Italienne de Construction", for which he designed the Hermes vehicle, with 4-cylinder engine, 140 mm. cylinder bore and 160 mm. stroke, with 2 valves per cylinder. After producing a few vehicles, this company was also dissolved.

Ettore continued his research and in July 1907, a new vehicle was ready. This was the first of Bugatti's single overhead camshaft engines. The Deutz Gasmotoren Fabrik purchased the production licence and, in the same year, the vehicle, which reached 50/60 HP, was on the road. Ettore was already thinking of other things and designed a much smaller car of only 1100cc weighing 300 kgs, capable of reaching 80 kph. It was 1909 and Ettore was now ready for greater things. Having obtained financial support from the Governor of Northern Alsace, Prince Hohenlohe-Schilling, in the autumn of 1909 Bugatti started looking for a place to build his factory. At the end of November he found it near Molsheim, a village of about a thousand inhabitants, 20 km. East of Strasbourg. He found a group of buildings and a house and set up on his own. He met with immediate success. Five vehicles were produced in 1910, 75 in 1911 with 65 workers, and in 1913, 175 vehicles with 200 workers.

During this period, Ettore found the time to carry out work for outsiders. In 1911, a project for a 10 HP vehicle was passed on to Peugeot and became the "Bébé Peugeot" which played an important role in the success of this mark – reputed production was 2,500.

By now, the world war was drawing near and Ettore buried some sports camboxes designed and constructed in the previous years.

He fled to Switzerland, and then to Paris, where he collaborated for some time with the French Air Force. After the war he returned to Molsheim and in 1919, he re-opened the factory. He dug up the camboxes, finding them intact, and used them for his new mod-



Ettore pictured with his automobile masterpiece, the 2-litre Type 35, at the Lyon Grand Prix 1924.

els, Types 22, 23 and 13. His vehicles won at Le Mans in 1920 and at Brescia in 1921.

In the following years, his factory improved on quality and quantity. His victories could be counted (288 in 1924, 577 in 1926 and 806 in 1927). Types 28, 30 and 35 were presented together with many others in 1924 and 1925, the Type 35 won the Targa Florio. The height of prestige was reached in 1927 when the prototype of the Type 41 was presented, the famous Royale.

Produced as a special series, of which only 6 units were made. The vehicle was guaranteed for the duration of its life, and had 8 cylinders, 200 HP for 3 tons weight. The chassis alone cost 500,000 francs. In the meantime, the durability of the Bugatti vehicles became legend-

ary, the success of the factory grew and consequently also its size, now employing more than 1,200 workers. The Bugatti quality became known throughout the world. Molsheim was now virtually a kingdom.

During those years Ettore's factory took on a characteristic appearance altogether in keeping with the many-sided personality of its owner. The vehicles produced were continually modified both mechanically and aesthetically according to the creative drive of Ettore who, besides dedicating himself to the designing of the vehicles, invented special machines for carrying out special processes. Slowly but surely real specialised artisan workshops came into being with the factory: cabinet-makers, upholsterers, saddlers, etc., which succeeded in putting into practice Ettore's innovative ideas. The result of a production policy such as this is obviously a product of great prestige.

The company Molsheim was however also affected by the Wall Street Crash in 1929, resulting in considerable financial problems. Ettore reduced expenditure for racing and attempted to enter different production areas such as work for the railways, for which he produced in 8 years, up to 1937, 86 highly successful railcars. But the company suffered from the objective contradictions within the organisation and a management which had the mentality of a far smaller company.

There are many books on Bugatti but this volume will show that Ettore Bugatti's activities were not only limited to the design of cars. He filed patents in quantity from a simple mechanical razor to fishing rods, bicycle saddles, a dentist's chair and some highly innovative machine tools. A stay in a clinic gave him the occasion to design a new model of a surgical trepan. He studied steam engines for locomotives and built railcars. He built an aeroplane powered by adapted car engines that could have been the fastest in the world in its time. He was interested in all forms of locomotion. He designed motorboats for competition and projected a boat capable of crossing the Atlantic in fifty hours with the help of eight Royale engines. At the outbreak of the 1939 war, he built a torpedo-boat with eight Type 50B engines. There was also a fantastic sailing boat, and also several years later a tiny dinghy. In all his works one finds the same constant solicitude for beauty for beauty's sake, as well as the personal logic which sometimes pushed him to the absurd. He thus joined in a certain manner that other original mind, Gabriel Voisin or the garnement genial as Jean Bernardet called him.

All has been said on that sort of sixth sense, which enabled him to find the ideal form of a part without the need of calculations. All has also been said about his character, his baits and even his fads such as his amazing suits, the hats that he wore on the back of his head or perched on his forehead according to his mood, his shoes and socks having fingers like gloves, his fondness for dogs, horses and their carriages. So many important elements of his extraordinary personality marked his output as his daily life was marked as much by severity as by extravagance and by a rational and determined non-conformity, to which should be added a certain taste for pomp and – it must be said – showmanship.

Ettore Bugatti had no fixed hours of work. With his natural creative talent he was able to visualise engineering drawings and indicate their essentials with a few strokes of the pencil; simplicity was the essence of his solutions to problems. Such were the characteristics of his methods of working.

He would readily explain that drawing was a sixth sense with him, and was indispensable when studying anything new. It was amazing to see the way he would pick up and feel a car part on his way through the workshops. Holding it in his gloved hand, like a sculptor bringing clay to life or a surgeon feeling for the painful spot, he could tell if there were flaws and give the remedy, whether in the alloy or the weight. Gloved because he liked hands to be neat and clean, but especially because the difference in temperature between the bare hand and metal always causes marks to be left on it.

He had a wonderful visual memory, a photographic mind, not only for things brought to his notice but for imagining creatively in the minutest detail. His inventions and designs are the basis of this book.

Although he never used a slide-rule, and only rarely a drawing board, the mathematical figures he gave his engineers usually proved to be right. He sometimes spent many hours in the drawing office at night, for he found that the silence helped him to work out problems, which had cropped up during the day; but this sometimes led him far from his starting point, to create the most extraordinary things.

REMBRANDT BUGATTI 1884 – 1916

Born in Milan, Italy, into a notable artistic family, Rembrandt Bugatti was the second son of Carlo Bugatti (1856-1940) and his wife, Teresa Lorioli. He was given his first name by his uncle, the painter Giovanni Segantini. His father was a successful and important new age furniture and jewelry designer who also worked in textiles, ceramics and silver metalware. As such, Rembrandt Bugatti grew up in an environment where a great many of his parents' friends were from the artist world. In 1902, the family moved to Paris, France, where they lived in a community of artisans.

As a child he hung around his father's workshop and was encouraged to try sculpting in plasticine or clay by the family friend and renowned Russian sculptor, Prince Paul Troubetzkoy (1866-1938). Rembrandt Bugatti was a young man when he began to work with the art foundry and gallery owner, Adrian Hébrard. He produced a number



Rembrandt 1884-1916

of bronzes which were successfully exhibited and promoted by Hébrard. Bugatti's love of nature led to him spending a great deal of time at Antwerp Zoo where he studied the features and movement of exotic animals. His sculptures of animals such as elephants, panthers and lions became his most valuable and popular works. The silver elephant mascot that sits on top of the radiator of the Bugatti Royale was cast from one of Rembrandt's original sculptures.



Rembrandt at work at Antwerp Zoo

As a recognised 'Animalier' he produced a total output of some 300 pieces and was appointed as a Chevalier of the Legion of Honour by the French government in 1911 when only 27 years old.

His life and works are brilliantly covered in a beautiful book entitled, "Rembrandt Bugatti" by Edward Horswell – see Appendix for full details.

Unfortunately, Rembrandt Bugatti suffered from mental health problems and he gradually slipped into a severe depression. In 1916, at the age of 31, he ended his own life. He is interred in the Bugatti family plot at the municipal cemetery in Dorlisheim in the Bas-Rhine department of the Alsace region of France.



Affiche de l'Exposition a Anvers en Juin 1910



Rembrandt with a lion cub at the Jardin des Plantes 1905

SOCIÉTÉ ROYALE DE ZOOLOGIE
D'ANVERS.
(SALLE DE MARBRE)

Exposition des Œuvres
DU SCULPTEUR
REMBRANDT BUGATTI

du 15 mai au 10 juin 1910.

Lith. Peulings Frères, Anvers.

GIANOBERTO CARLO MARIA AUGUSTO (JEAN) BUGATTI 1909 – 1939

Son of Ettore Bugatti and fourth in the line of artistic endeavour – the thread that runs through the Family Bugatti.

After his adolescence in Molsheim, by 1930 Jean Bugatti was already involved in all the activities regarding automobiles, racing and railways. After collaborating in the realisation of the Type 50 in 1930, his participation in the company activity became consistent and in 1930, he played a part in the creation of the Type 51. The vehicle won the Grand Prix at Monaco in 1931.

He reached the maximum of his designing ability in 1934 with the realisation, on the base of the model 57, of masterpieces such as “Atlante” and “Atlantic”. The soft forms of these vehicles, both rounded and delicate, revealed a complete stylistic autonomy, leaving far behind the vehicles designed by his father. This was also due to their singular aerodynamic efficiency. In 1937, one of his “57” models won Le Mans, and 2 years later obtained again the same victory.

It was whilst testing the vehicle which had won this race, on a straight road in Molsheim, that Jean met his death on 11th August 1939, swerving to avoid a cyclist. He was much mourned, especially since he had shown such great talent, both as a designer and manager, and above all, because he had not had time to express his capabilities to the full.

However ‘Jean’ Bugatti had blossomed into a good engineer not afraid to think laterally and his most interesting concept was perhaps the patent he took out in 1938 for a tilting train (see over). The full patent (in French) can be obtained from the Bugatti Trust.

What an interesting design!



Jean Bugatti 1909-1939



An interesting photo showing Jean (16) holding his younger bother Roland



Ettore at the wheel with Jean circa 1924