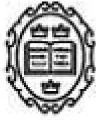

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Charlotte Benton

Le Corbusier: Furniture and the Interior

Introduction

Almost every important inspiration [in furniture design] comes from architects.[1]

While it is probably true that trained designers like Gerrit Rietveld, Marcel Breuer, or Adolf Schneck[2] made chairs, tables and cupboards which are of more lasting interest to the design historian, any history of European furniture design of the period 1925–30 which discounted the contribution of Modern Movement architects like Mart Stam, Mies Van der Rohe, Alvar Aalto, and Le Corbusier would be incomprehensible **[1]**. Virtually every architect of note felt the need to design at least one 'modern chair' during the formative years of the Modern Movement.

There are a number of reasons why such architects should have assumed that the design of furniture was a natural extension of their role. These ranged from expediency through a desire to show off architectural interiors to advantage to a more basic conviction, rooted in the Arts and Crafts Movement, that the heart of architectural composition was the interior.

1 Mies van der Rohe, Cantilever chair with arms, 1927. Woven cane seat/back and arm rests; painted tubular steel frame

In the troubled times after the First World War, when there was no money for building, architects rediscovered their Arts and Crafts roots, often in the new contexts of Expressionism, de Stijl or Constructivism. It is characteristic that the first developed formal expression of de Stijl principles was a chair and that the Bauhaus and the Vkhutemas expressed architectural ideas through craft production. The central feature of the Bauhaus exhibition of 1923 consisted of a model house[3] furnished with craft products by the staff and students of the workshops **[2]**. Although Breuer's wooden furniture in this exhibition, with its semi-expressionist, semi-constructivist forms was a far cry from the spirit of Gropius's notion of 'Art and technics: a new unity', they were an attempt to provide symbolically charged objects which could be described in architectural terms. It was natural, therefore, that two years later, Breuer should be designing tubular steel furniture for the new Bauhaus buildings and Master's houses at Dessau.[4] And two years later again, most of the international architects who designed houses and flats for the Weissenhof Siedlung furnished their show interiors with their own designs **[3]**.[5]

There are a number of reasons why these architects designed furniture to equip their interiors. Most important was the obsessive concern among modern architects to create the impression of a magical expansion of space with economy of means. As the architect Hans Schmidt commented on the Weissenhof exhibition interiors:

All of the projects have clearly been spawned from the desire to create as large a space within these small houses as possible . . . As a result we have a series of endless combinations: dining-room/living-room/hall; study/living-room/

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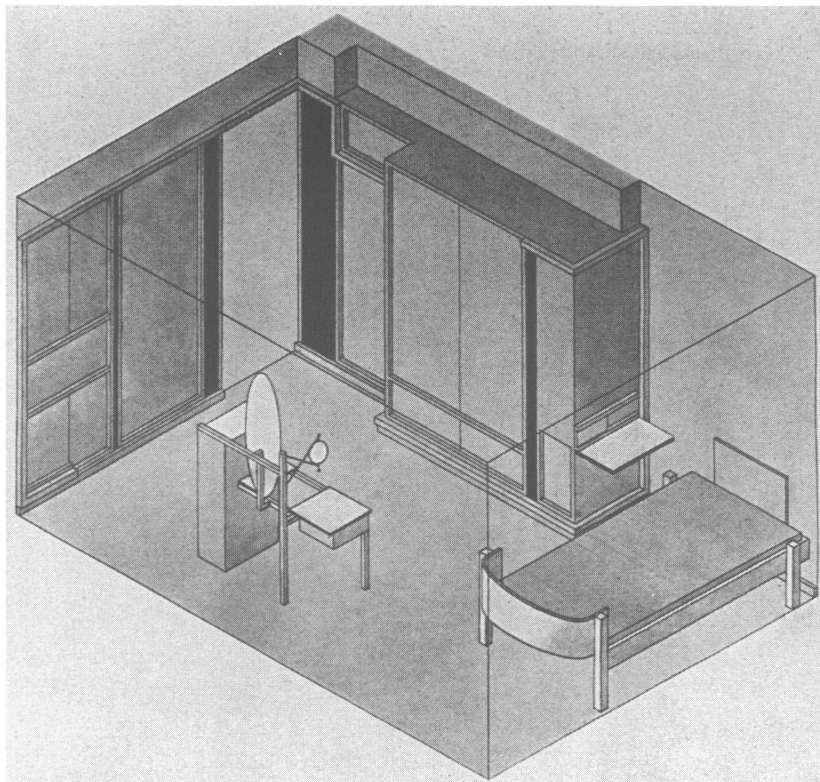

2 Woman's bedroom, Haus am Horn, Weimar, 1923, with furniture designed by Marcel Breuer (house designed by Georg Muche)

stairwell, and so on. Very nice to look at, but completely unusable . . . The movable wall is a veritable trademark of the exhibition houses, and this again we can hardly regard as a sign of progress. On the contrary, we are most painfully reminded of the staircase-halls and the suites of rooms inter-connected by double doors which were a feature of the 1890s.[6]

Architects designed furniture which could express the new life-style in a way which was characterized less by 'possessions' and more by 'activities'. Where possible, storage of various kinds and even divans and beds were built in. The irreducible element of furniture remained the chair. Where architects did not design their own, they chose the Thonet bentwood models which combined impeccable industrial credentials, the advantage of cheapness, and minimal spatial clutter **[4]**. Tubular steel furniture design has to be understood as an attempt to modernize bentwood, using materials and formal properties even more redolent of modernity, combined with the suggestion of mass production (often illusory) and, above all, as a contribution to the imagery of spatial transparency of the interior.

The design of the modern chair thus became a kind of exemplary allegory of modernism. The modern man and woman needed a modern chair. Breuer's Wassily chair crops up frequently in images of avant-garde German society. There were tactical and practical advantages too, for furniture design operates at a level of fashion and taste which has a quicker response rate than architecture. The taste for novel design promoted by the economic revival in Europe after 1925, and show-cased by the Paris 1925 Exhibition, unleashed appetites which were ripe for exploitation. Tubular steel chairs could be sold by sympathetic shops and stores, and even become 'smart' in circles where modern architecture was still thought of as reductively functionalist and dangerously bolshie.

Le Corbusier, though his early practice was founded on furniture and interior design was late into the field of the 'modern' chair.[7] Not until 1927–9, with the help of Charlotte Perriand who was taken into the studio expressly for the purpose of designing furniture, did he tackle the 'problem'. And by then his architectural practice was developing considerably in its complexity and attitude to materials, and in his paintings he had abandoned Purism and was beginning to explore Surrealism, together with a more earthy iconography and

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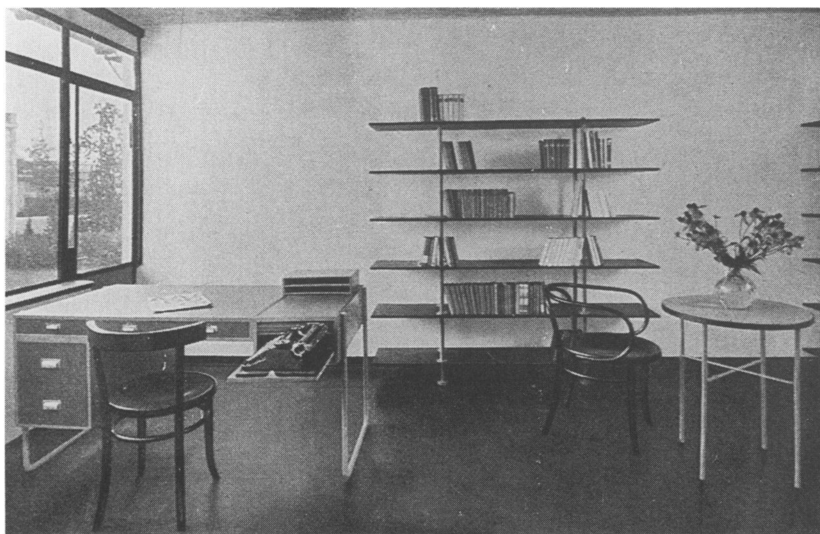
3 J. J. P. Oud, interior, Weissenhof Siedlung house, Stuttgart, 1927; furniture designed by the architect

organic forms. The resulting chair designs embody some of these complexities and tensions and are thus significantly different from—and more culturally complex than—those of his colleagues in Germany and Holland. That this is so is all the more interesting given his own roots in the Arts and Crafts Movement and his early experience of designing furniture.

Le Corbusier: Early Work

Although Le Corbusier did not acknowledge the early furniture designs in his record of his own work, the *Oeuvre complète*,[8] his interest in the 'problem' of the interior and his activities as a furniture designer go back to his early independent practice in his native town, La Chaux-de-Fonds in the Swiss Jura, in the years just before and during the First World War.[9] On a letter head of the period Jeanneret—as he was then called—described himself as an 'Architect-consultant for all matters concerning interior decoration conversions, furnishings and garden design'.[10]

Jeanneret trained initially as a watch-engraver at the local art school, where the courses were still largely geared to the still dominant but declining, local watch-making industries.[11] In 1905 a new 'Cours supérieur de composition décorative'—later



4 Mart Stam, living-room, Weissenhof Siedlung house, Stuttgart, 1927, showing Thonet bentwood chairs

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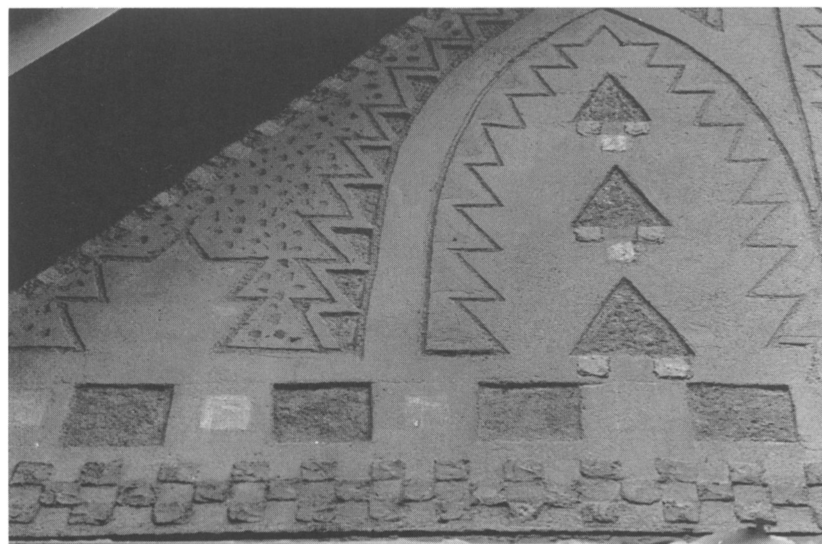
renamed the 'Nouvelle section'—was set up by one of the teachers, Charles L'Eplattenier. Modelled on German and Austrian precedents the course combined practical training with the study of natural form and local motifs and was much influenced by the writings of Ruskin and Owen Jones, as well as by the work of J. M. Olbrich. The course was intended to broaden the scope of the training offered to students, to equip them as decorators for a range of crafts and thus to revitalize the local métiers d'art to help these more effectively meet the challenge of foreign competition.[12] Jeanneret followed the course in its early years and, under L'Eplattenier's influence, he began to turn, at first unwillingly, increasingly towards architecture.[13]

Although Jeanneret's earliest architectural designs are rather sparsely documented, it is clear that some of them included furniture design.[14] One of the earliest commissions with which his name is associated is that for the Villa Fallet (1906), undertaken in collaboration with other pupils of L'Eplattenier, which demonstrates the regionalist aesthetic of the Cours supérieur in its overall design, its materials, and its stylized Jurassien detail **[5–6]**. A contemporary photograph of the interior indicates that the furniture was, in true Arts and Crafts manner, of a piece in its materials and detailing with the detailing of the interior architecture.[15]

In the following four years, from 1907 to 1911, Jeanneret travelled extensively—to Italy, France, Austria and Germany, the Balkans, Greece and Turkey. In Paris he worked briefly with the pioneer of concrete construction Auguste Perret, and in Berlin with Peter Behrens. These travels and contacts

6 Charles-Edouard Jeanneret, Villa Fallet, La Chaux-de-Fonds, 1906–7. Detail of staircase-landing



5 Charles-Edouard Jeanneret, Villa Fallet, La Chaux-de-Fonds, 1906–7. Detail of incised render on main gable end, garden front

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enormously extended his knowledge of historical (both monumental and vernacular), as well as contemporary, architecture and applied arts.[16] And although Jeanneret's instinctive tastes were initially for the picturesque—he was captivated, for example, by the medieval walled city of Nuremberg—he increasingly came to admire the ordered regularity of classical architecture.

As to modern work, Jeanneret's former fellow student and travelling companion, the sculptor Léon Perrin, wrote from Vienna in December 1907:

> For Edouard Jeanneret I think—and he does too—that he certainly has something to learn from the interiors (materials, methods, etc.).[17]

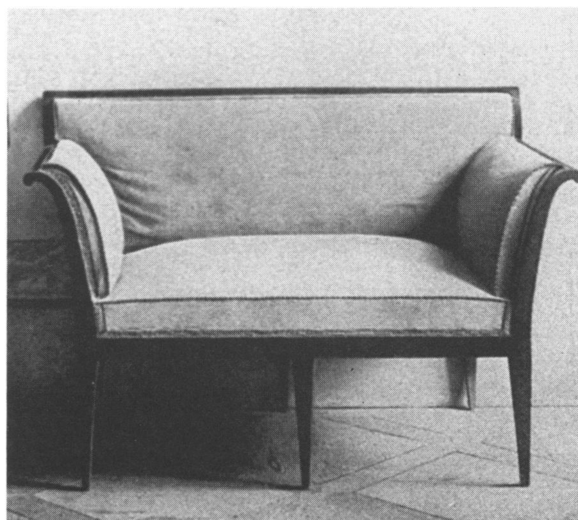
It's not clear which particular interiors interested Jeanneret—he would later be dismissive of the work of Joseph Hoffman and of J. M. Olbrich. Nor are the lessons of Vienna immediately reflected in his own work. What seems to have interested him was what he defined as 'des fortes oppositions de valeurs' (strong contrasts of values), which may, perhaps be a reference to the kind of contrast of simple, cubic forms with rich surface effects to be found in the work of Viennese designers such as Hoffmann or Kolo Moser. The apparent simplicity of such work was powerfully underlined by their stylized drawing techniques.[18]

Jeanneret's travels made him progressively more sceptical of the economic and aesthetic realism of the project for a regionally based revival of the crafts in association with industry with which he had been involved in La Chaux-de-Fonds. And he perceived on his journey through the Balkans that indigenous craft traditions were in a state of terminal decline, their authentic cultural basis irretrievably lost in an era when mass-produced goods could, by virtue of the railways, flow freely and rapidly across frontiers.[19] He saw that it was essential to come to terms with modern methods of production and to find forms appropriate to those methods. And his knowledge of German initiatives in the applied arts as well as of current developments in France suggested to him that these had the edge over Swiss goods, not only in terms of quality but in their reflection of what he defined as 'the new spirit'—a characteristic which was not to be confused the style of the moment.[20] In a sketchbook note about the products available in Primavera, the newly established art furnishing department of *Au Printemps*, Jeanneret observed 'It is taste and not simply a modern style'.

Independent Practice in La Chaux de Fonds: 1911–1917

'Deny arts and crafts . . .' Jeanneret would later write. By the time he returned to La Chaux-de-Fonds and took up a part-time teaching post in the 'Nouvelle section' in December 1911, Jeanneret had begun to renounce his Arts and Crafts roots and the prevailing regionalist aesthetic of the L'Eplattenier circle, but without having a very clear alternative. At first he seems to have taken cues from contemporary German sources such as *Um 1800* **[7]** a sympathetic study of architecture and interior design around 1800 written by the architect Paul Mebes,[21] and perhaps also from the work of the architect-designer Bruno Paul whose work was inspired by similar sources.

The shift of direction was marked in the adoption of a more 'universal' architectural language in the neo-classicist designs of the villas Jeanneret and Favre-Jacot **[8]**.[22] This shift was parelleled in Jeanneret's interiors by a progressive stripping away of surface ornament, and in his furniture by designs based on Biedermeier or simplified Directoire



7 Illustration from Paul Mebes, *Um 1800*. Jeanneret designed furniture for Moise Schwob, *c.* 1916, which drew directly on this type of model

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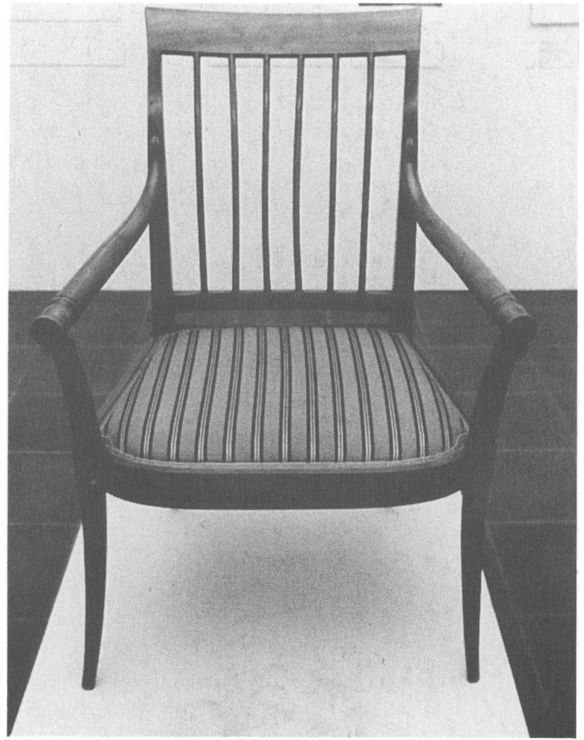
8 Charles-Edouard Jeanneret, Villa Favre-Jacot, Le Locle, 1912. Entrance front



9 Charles-Edouard Jeanneret, Chair made for the Ditisheim family, *c.* 1916

sources **[9–10]**;[23] some storage fitments also began to be built in.[24] Jeanneret would characterize his approach to interior conversions at this time as one which demanded:

> above all the stripping away of stucco and gilding and imitation wood or marble and the elimination of fussily decorated wood panels and replacing these superfluous elements with most extreme simplicity . . .

Such 'a simplification of forms' and 'simplicity in the use of materials' were, he claimed, 'real innovations in that locality' at that time.[25]

In 1912 Jeanneret had written of his former mentor L'Eplattenier: 'Our conceptions are completely opposed. There is nothing to keep me here now.' By 1914 Jeanneret had determined to leave La Chaux-de-Fonds to settle in Paris, but the outbreak of war disrupted his plans. During the war years, besides commissions for interior conversions and furniture design, he was occupied with the commission for the Villa Schwob, his most ambitious building so far.[26] And he began to look ahead, becoming preoccupied with the design of projects for prefabricated and standardized housing for the post-war reconstruction of the devastated areas of Northern France.[27]

The most significant result of this interest was the so-called Dom-Ino system, a proposal for a standardized mass-producible skeleton housing unit.[28] The system consisted of a smooth horizontal concrete slab supported at regular intervals by concrete columns or piers which were recessed from the edge of the slab so that the facades could be quite independent of the structural supports. The Dom-Ino schemes were never built, but the system implied the possibility of radical changes to both the exterior internal layout and exterior appearance of the building—the free planning of the interior and the opening (or closure) of the facade at will, according to aesthetic preference. (These implications would be realized in Le Corbusier's villas of the 1920s.) At this stage Jeanneret's assumptions about standardization, new materials, and new forms had

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10 Charles-Edouard Jeanneret, Desk made for his mother, *c.* 1916

11 Charles-Edouard Jeanneret, Villa Schwob, La Chaux-de-Fonds, 1916–17. View of living-room (photo taken in 1986), showing full height window, overhanging bedroom (top centre) and glazed doors (foreground right)

no echo in his furniture design—perhaps unsurprisingly.[29]

Villa Schwob, the last of Jeanneret's houses in La Chaux-de-Fonds was a concrete framed building which, although not directly based on the Dom-Ino structural system developed some of its implications. The interior of the house is opened up vertically and horizontally **[11]**: a double height living-room, lit by a double-glazed window rising through nearly its full height, dominates the interior.[30]

Aside from the Dom-Ino project the Villa Schwob was the only one of his early buildings that Le Corbusier would publish, probably because he felt that it was his first truly independent work and one which, in its essentials, represented his mature aesthetic. It was perhaps precisely because of his sense of the significance of the Villa Schwob that he was particularly sensitive to the question of its interior finishes and furnishings. Writing to Mme Schwob from Paris he observed critically:

> The living room is . . . not yet right. The chief reason is the awful and enormous carpet which takes away all the tranquillity and grandeur and destroys the spirit of the architecture. The clutter caused by furniture of doubtful quality is responsible as well. It is essential to purify . . . In architecture as demanding as this, all efforts must be concentrated on purifying, on eliminating the superfluous, on serving only the useful, the strong and the tranquil . . .[31]

The theme of the client as vandal would be aired again in a pseudonymous article by Amadée Ozenfant:

> Wallpapers, paintings on the wall, little bits of furniture with their knick-knacks are the brutal ransome imposed by the client. When the architect hands over the keys of the house, his heart sinks. He knows that the owner, who would consider himself a vandal if he retouched a painting even slightly, will have no compunction in smothering the walls with intemperate wall-papers which will unbalance

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the spaces, in cluttering the rooms with any old furniture which will destroy the effect of the volumes, and in hanging up prints which will upset the order the order imposed by the architect.[32]

How to minimize the effect of the clients tastes and existing possessions was implicit in Jeanneret's—now Le Corbusier—approach to the design of the interior in the 1920s.

Early Parisian projects: Purification through Emptiness

The Villa Schwob had signalled the beginnings of a process of 'purification through emptiness'[33] in Jeanneret's work[34] and the process of the 'purification' of the interior, by ridding it of the superfluous, was pursued in Le Corbusier's early Parisian projects—during the period of 'vacuum-cleaning', as Ozenfant dubbed it.[35] Drawings and photographs show the progressive purging of the interior: perspective is exaggerated to underline the sense of space;[36] furniture is pushed into the background;[37] conventional room divisions are broken down and fitments used to make partial enclosures within a larger space;[38] storage fitments become co-extensive with the building.[39]

This purging of interior space was further underlined by the use of a restricted repertoire of furniture types and the recurrent use of particular examples in interiors of the early 1920s—notably selected Thonet bentwood chairs and Maples 'club' armchairs. Some sketches also show an adjustable chaise-longue popularly known in the department store catalogues of the period as the 'Morris' chair [12].[40] And colour and sculptural effects began to be deployed to emphasize the deliberate, composed, qualities of the interior—like a three-dimensional Purist painting.[41] Something of the spartan effect of the interiors of this period is conveyed in Lotti Jeanneret's description of her husband Albert's bedroom:

> The room is small but sufficient for a person who only spends his nights there. A couch covered with silver-grey velvet, two white chairs, a cupboard for clothes fastened to the wall. 'A cell' said a visitor. 'The bedroom of a man with common sense' retorted Le Corbusier.[42]

The idea that there was a 'correct' way of consuming this composition was implicit in the introduction of the 'promenade architecturale', which revealed

12 'Morris' chaise-longue, from a catalogue of *Au Printemps*, 1926

the interior as a succession of dramatic vistas,[43] and in the selection of 'official' photographs for publication. Such photographs were usually taken before the client had occupied the building and made it their own[44]—that is, before the random, incidental distribution of the client's possessions could compromise the deliberate compositional effects [13]—and tend to underline the asceticism of the interiors.

Raoul La Roche identified the limitations of such images when he wrote Le Corbusier about Boissonas's photographs of the La Roche house:

> Despite Monsieur Boissonas's art the 'Villa la Rocca' is more beautiful in the flesh than in the 'painting'. Why is that? Certainly it is because the best reproduction can only imperfectly capture the emotion experienced in direct contact with the symphony of prisms.[45]

Similarly, in 1955, nearly thirty years after the completion of his house in Antwerp, the painter René Guiette wrote to Le Corbusier:

> Perhaps you sometimes think of the house in Antwerp which you built for me. Perhaps you can image what joy I have had from living in it—and this since 1926–7.[46]

In contrast to the bleak photographs of the building published in the *Oeuvre complète*, Guiette's own photographs took cues from his perceptions of the particular qualities of the house—its varieties of transparency and its relationsihp with its garden—and from banal signs of occupancy, to provide evocative images of the everyday life of the house.

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13 Living-room of the Villa Stein, *c.* 1928

Sources of Form

If the new interior had something of the spartan character of a monk's cell or an artist's studio, this was to be combined with the suggestion of the organized efficiency of the modern interior. Le Corbusier pursued a Taylorist analysis of the components of the domestic interior.[47] His analysis and classification of the functions of furniture lead him to the conclusion that furniture could be defined as:

tables for work and for dining
chairs for dining and for work
easy chairs of different kinds for relaxing in various ways and pigeon holes for storing the things we use . . . Besides chairs and tables, furniture is nothing more than pigeon holes.[48]

The idea of 'equipping' the domestic interior replaced that of furnishing it:

A new term has replaced the word furniture . . . the new word is the equipment of the house. To equip is, through the analysis of the problem, to classify the various elements necessary to domestic functioning . . .[49]

The design of Citrohan I had incorporated elements derived from the industrial workplace.[50] In his furniture design, too, Le Corbusier began to draw on non-domestic sources. He was fascinated by the image of the modern Taylorized office as a model of ordered efficiency whose key elements could, suitably adapted, be translated to the domestic realm **[14]**.[51] Similarly, he was fascinated by the spatial economy of the ocean-going liner cabin,[52] and the traveller's trunk **[15]**.[53] These examples inspired the design of the 'casiers standard' **[16]**, which made their first public appearance in the Esprit Nouveau

Ceci est froid et brutal, mais c'est juste et vrai ; ce sont là les bases (Ormo).

14 Ormo steel office furniture, as illustrated by Le Corbusier in *L'art décoratif d'aujourd'hui*

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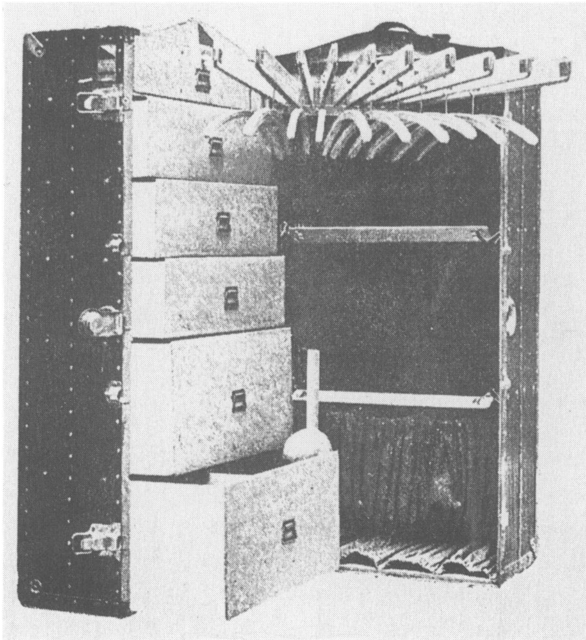
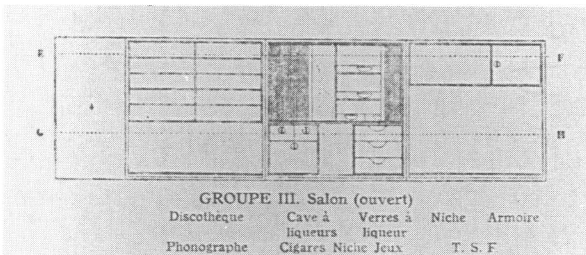


15 Innovation trunk, as illustrated by Le Corbusier in *L'art décoratif d'aujourd'hui*

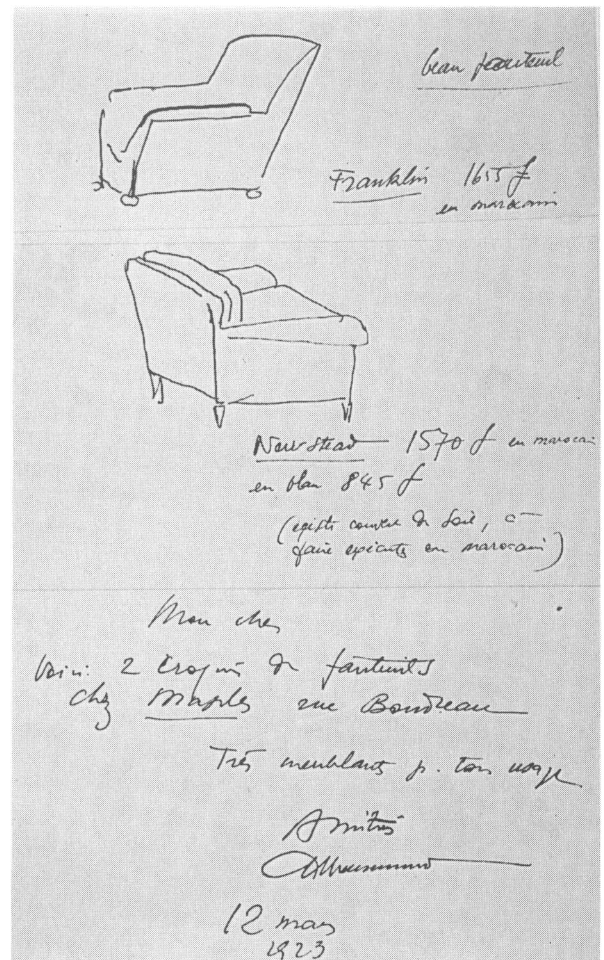


16 Le Corbusier, Design for the casiers standard for the living-room of the *Esprit Nouveau* Pavilion, 1924–5

pavilion at the Paris 1925 Exhibition, alongside tubular steel framed tables designed by Le Corbusier.[54]

The casiers provided a standardized, modular storage system, which rationalized the functions of a variety of pieces of furniture (wardrobes, chests of drawers, sideboards, etc.) into a single basic unit.[55] They were designed to take a variety of interior fittings and external finishes according to their function and location and to the financial means of the householder. The casiers were also conceived as architectural components: they could be used to divide and model space, replacing full height partition walls. Indeed, they were proposed partly as a means of improving building efficiency, to eliminate the on-site work of carpenters and joiners. Cast in concrete or bought ready-made for installation by the builder they could become not only an integral part of the 'renewed plan' of the modern house but of its construction;[56] and painted in Purist colours they would form components of the three-dimensional composition.

By 1925, then, Le Corbusier had designed two of the components necessary to equip the domestic interior—tables and casiers—but for the third—seating—he was still dependent on selected 'ready-mades', notably the Thonet B9 bentwood chair, and variants of Maples' club leather-upholstered armchairs **[17]**. These particular examples fitted two of



beau fauteuil

Franklin 1655 f
en maroquin

Newstead 1570 f en maroquin
en blanc 845 f
(existe couverte de soie, et faire exécuter en maroquin)

Mon cher
Vu: 2 croquis de fauteuils
chez Maples rue Boudreau
Très meublant p. ton usage
Amitiés

12 mars
1923

17 Letter of 12 March 1923 showing Maples' 'Franklin' and 'Newstead' club armchairs

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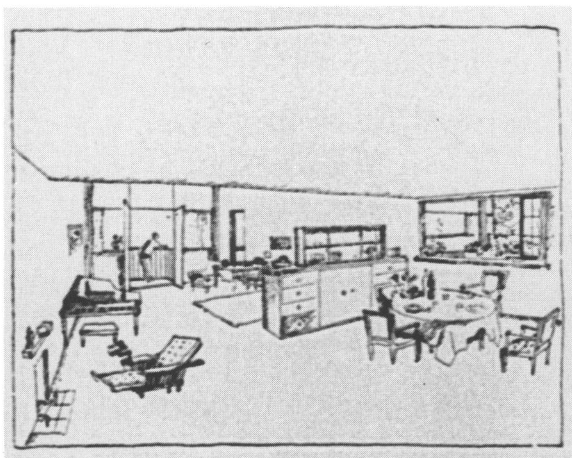
Le Corbusier's three categories of chair types: the former provided an 'active' chair for working ('an instrument of torture which keeps you wonderfully awake') and the latter an easy chair ('which gives me a decent and civilized posture' in which to converse).[57] Used in combination, however, they provided another essential ingredient of the Corbusian interior of the 1920s—the element of paradox created by the 'contrast of values' set up by the confrontation of the 'humble Thonet bentwood chair, which is certainly the most banal as well as the cheapest of chairs' and the bespoke readymade 'the beautiful leather furniture by Maples . . . costing a thousand francs'.

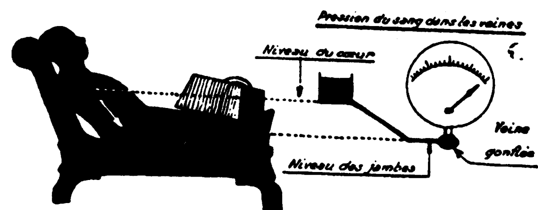
Whilst a readymade prototype for the third category of chair—that for relaxing—was identified in detail as:

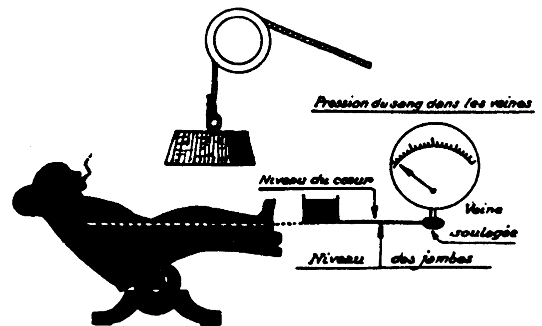
> the inclining Morris chair with its, mobile attachment to hold a coffee cup, its extension for stretching out one's legs and its inclining back-rest, which can be adjusted by a handle hygienically, comfortably and precisely to positions ranging from one most suitable for a siesta to one suitable for work[58]

and makes its appearance in some sketches of the early and mid-1920s **[18]**,[59] Le Corbusier never seems to have employed it in the furnishing of his interiors.[60] One of the reasons may be that he had at least one other model for this category of chair, the therapeutic 'Sur-repos' of a certain Dr. Pascaud **[19]**.[61] Again this chair was never used in any interiors[62]—probably because it manifestly lacked



18 Le Corbusier, Sketch of living-dining area of the 'Immeubles-villas', 1922, with 'Morris' chair





19 'Après le surménage . . . le surrepos'. Dr. Pascaud's 'Surrepos'

the formal purity which Le Corbusier discerned in the Thonet and Maples chairs. But some of the principles on which it was based would be combined with elements derived from the Morris chair, together with other, and less mundane, imagery[63] as ingredients of the later chaise-longue. A number of sketches of interiors of the mid-1920s show Le Corbusier experimenting rather unsuccessfully with the idea of this type of chair **[20]**.[64]

Although a letter of July 1927 from Le Corbusier to the site architect of his houses at the Weissenhof Siedlung suggests that Le Corbusier had had a prototype of at least one chair design made up in Paris, this never materialized.[65] And, had it not been, perhaps, for the competitive stimulus to furniture design generated by Stam's and Mies van der Rohe's chairs exhibited at the Weissenhof Siedlung, for the critical reaction to the 'problem' of furniture pinpointed by this exhibition,[66] and for the fortuitous arrival of the furniture designer Charlotte Perriand in the rue de Sèvres atelier in the autumn of 1927,[67] Le Corbusier might very well have contented himself with the readymades.

Perriand had trained as an interior decorator and furniture designer at the Ecole des Arts Décoratifs in Paris in the early 1920s. By 1926 she was already

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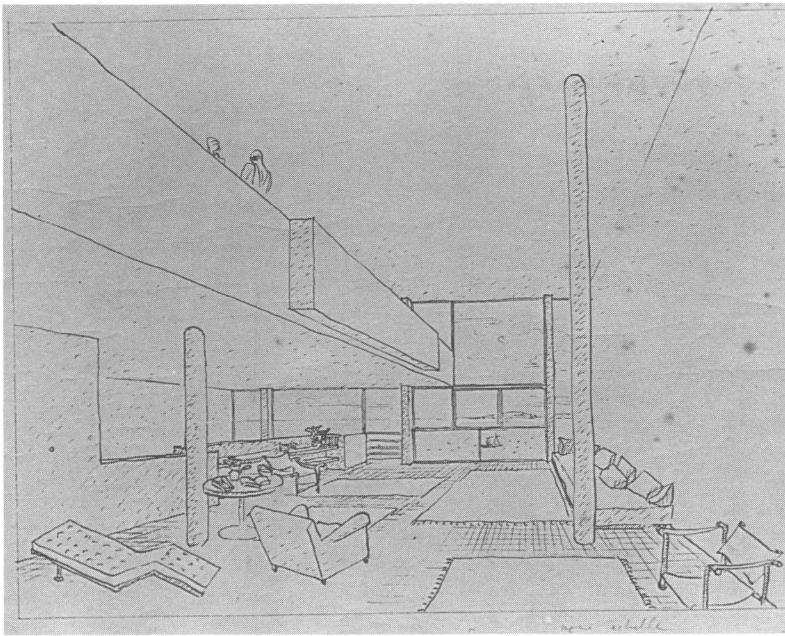
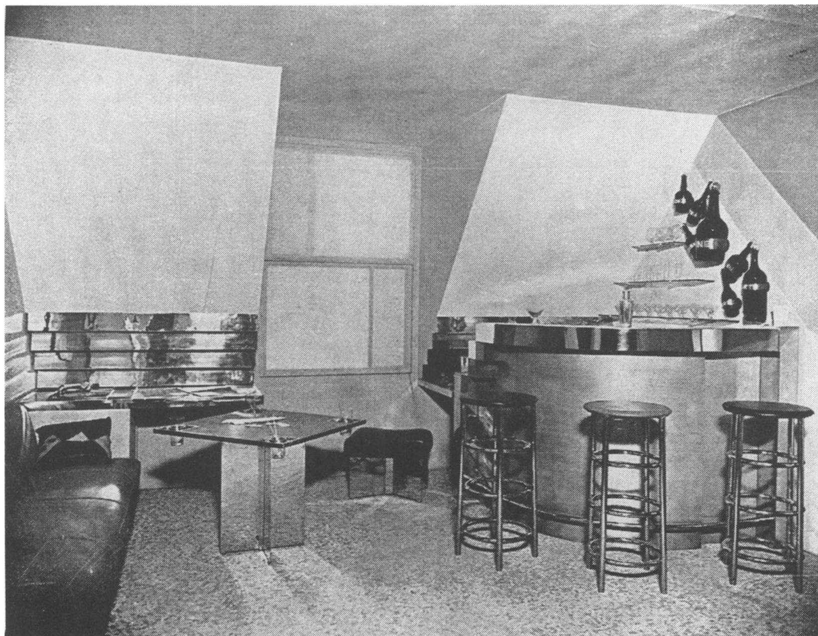


20 Le Corbusier, First project for Villa Baizeau, 28 February 1928, showing living-room with a version of the 'chaise à dossier basculant', a Maples chair, and a chaise-longue

beginning to establish a reputation for herself when she was introduced to Le Corbusier's *Vers une architecture* and *L'art décoratif d'aujourd'hui* by the jewellery designer Jean Fouquet; these, she later recalled, 'demolished everything I had learned . . . I no longer had a block'. Perriand quickly absorbed the rhetoric of machine-age modernism: the idea of 'equipment' replaced that of 'decoration'; steel and glass were seen as the authentic materials of the age. The results of this sudden enlightenment were to be seen in the gleaming chromed steel furniture and wall surfaces of the 'Bar sous le toit' which Perriand exhibited at the Salon d'Automne in 1927 **[21]**. On the strength of its succès de scandale Perriand sought an introduction to Le Corbusier and was taken on as 'a pupil for architecture and a collaborator for furniture'.[68]

Over the next two years the partnership would



21 Charlotte Perriand, 'Bar sous le toit', Salon d'Automne, 1927, with chrome-plated furniture

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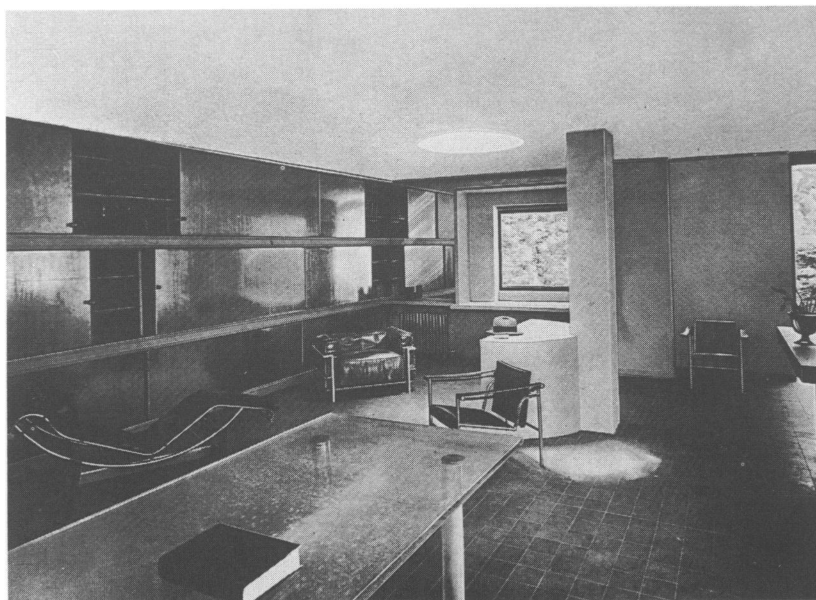
produce all the 'classic' chair designs as well as more refined versions of the tables and casiers. Unusually there were opportunities to use the furniture not only in the 'ideal' world of the exhibition **[22]** but in real Corbusian interiors **[23]**, for this was the period when the furnishing of the living-room/gallery of the earlier La Roche house was at last 'resolved' and the library of the villa Church completely furnished with the partnership's prototypes.[69]

Materials and Techniques

'There is no reason why wood should remain the primary material of furniture', Le Corbusier had written in *L'art décoratif d'aujourd'hui*.[70] 'Steel' asserted Perriand 'plays the same part in furniture as concrete has done in architecture'.[71] The example of modern industry—in particular that of transport—provided inspiration for the proposed materials and

22 Charlotte Perriand, Dining-room, Salon d'Automne 1928, with revolving chairs and extendable table



23 Le Corbusier/Pierre Jeanneret/Charlotte Perriand, Library, Villa Church, 1928–9

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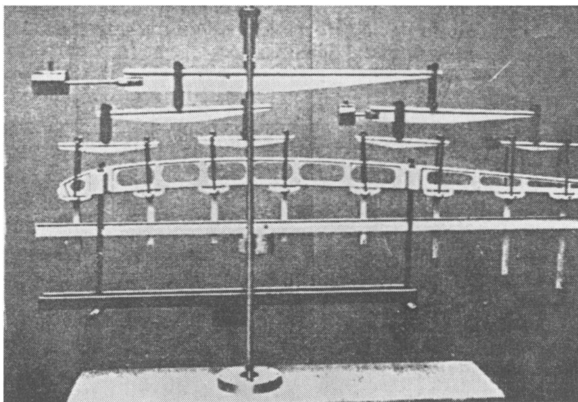
methods of production of the partnership's designs.[72]

During the First World War that most 'modern' of French industries, the aviation industry, had both developed the use of new materials and pioneered innovative uses of traditional materials and handcraft techniques [24]—a paradox which Le Corbusier no doubt appreciated.[73] Similarly, the automobile industry provided an example of the use of both new and traditional materials which were processed by a combination of modern and adapted traditional techniques. Here again the element of paradox seems to be important, for although Le Corbusier was fascinated by the idea of the mass-produced automobile represented by Henry Ford's Model T, he was seduced visually by the image of luxury represented by the coach-built automobiles displayed in the grand showrooms on the Champs-Elysées. The idea of suggesting a confrontation of the 'industrial' and collective with the domestic and individual, of the transformation of brute primary material (steel) to the polished perfection of an exemplary domestic environment would find its most complete expression in the interiors exhibited at the Salon d'Automne in 1929.

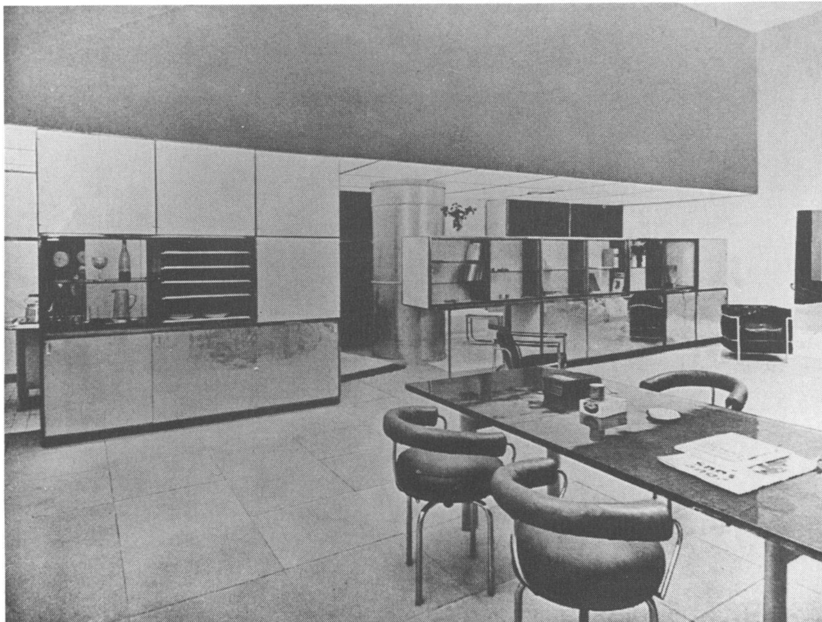


24 Plywood aeroplane wing struts, as illustrated by Le Corbusier in *L'art décoratif d'aujourd'hui*

The partnership initially approached Peugeot; as Perriand later recalled:

> Before offering the designs to Thonet, we tried offering them to Peugeot—but Peugeot wasn't interested. I had thought that Peugeot, which mass produced bicycles, could mass produce furniture . . .[74]

In return for financing the partnership's exhibit at the Salon d'Automne in 1929 [25], Thonet gained the rights of exploitation of the designs. But, as Perriand wryly observed, Thonet, whose name was synonymous with the manufacture and distribution of low-cost bentwood furniture, 'did not make the



25 Le Corbusier/Pierre Jeanneret/Charlotte Perriand, 'The equipment of a dwelling', Salon d'Automne, 1929. View of living-room, showing tubular steel framed chairs, table with cast glass top, and chrome plated casiers standard (furniture executed by the Paris branch of Thonet). To reinforce the idea of transparency and light which Le Corbusier described as 'the source of life and joy in the home', the floor was covered in cast glass slabs and parts of the ceiling were made of etched and cut glass panels

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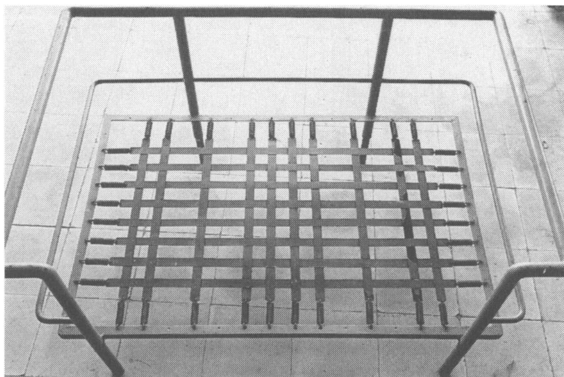
number we wanted; they did not bring down the price' and, worst of all, 'they behaved just like a furniture retailer'.[75]

Although Thonet had begun to buy up tubular steel furniture manufacturers from 1928, and to acquire the rights on a number of individuals' designs, it seems likely that several of the designs which appear in Thonet catalogues of the late 1920s and early 1930s—including those of Le Corbusier, Jeanneret and Perriand—were produced in very limited quantities, if at all.[76]

Evaluation: the Avant-garde Context

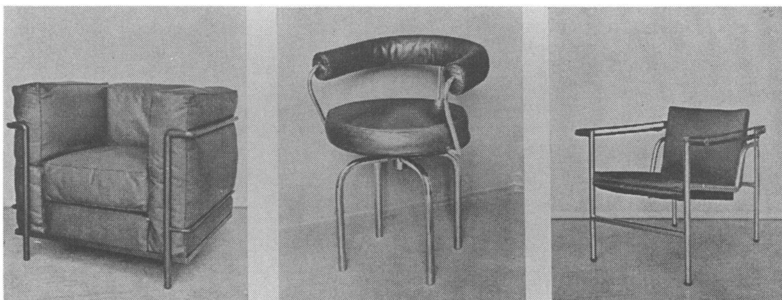
The partnership's designs were neither particularly well adapted for mass-production processes nor for ease of assembly compared with, say, Breuer's Wassily chair or Mies's MR chair. Both the 'fauteuil grand confort' **[26]** and the 'chaise à dossier basculant' consisted of several tubular steel members of different lengths which required some complicated right angle welding, as well as numerous more straightforward welds. As Charlotte Perriand has observed Le Corbusier was more interested in the symbolic associations of materials and techniques than in 'exploring new technical possibilities or experimenting with the physical properties of material', and in 'certain industrial products (which suggested the world of technique) in a new context'.[77] In practice materials were used for their associational qualities and for aesthetic effect. As in Le Corbusier's earlier interior and furniture designs the idea of confrontation and paradox was an essential ingredient: 'organic' form and 'natural' materials were combined with the *suggestion* of 'mechanical' techniques and 'industrial' materials. As if the notion of a 'machine for resting in' were not itself a contradiction, Le Corbusier underlined the symbolic relationship of the 'natural' and the 'mechanical' when he noted of the chaise longue:



26 Le Corbusier/Pierre Jeanneret/Charlotte Perriand, 'Grand confort' frame. This version, which was in Le Corbusier's own flat, was painted green

> it will go to any position; my weight is sufficient to adjust and maintain it . . . there's nothing mechanical about it . . .[78]

One of the striking features of the partnership's chair designs **[27]**, compared with contemporary designs by Mies or Breuer, is the degree to which they represent 'machine age' equivalents of the readymades, though—as I have suggested—these sources are often synthesized with other sources and associations as well. Thus the 'grand confort' may be seen as a reinterpretation of the Maples 'club' armchair (now turned inside out, with the 'skeleton' on the outside). The revolving chair combines elements of the Thonet bentwood chair with those of a revolving office chair.[79] The 'chaise à dossier



27 Le Corbusier/Pierre Jeanneret/Charlotte Perriand, Chairs, 1927–9. Left to right: 'grand confort', revolving chair, 'chaise à dossier basculant'

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basculant' was based on the type of nineteenth-century colonial officer's chair usually known as a 'safari' chair, and there are obviously parallels to be made with Breuer's Wassily chair, as well. And the chaise-longue derives elements from a variety of sources: notably from the adjustable 'Morris' chair, a late nineteenth-century Thonet rocking chaise-longue, and Dr. Pascaud's 'Sur-repos'. Although these 'sources' are subsumed in an avant-garde imagery and in the rhetoric of mass-production the partnership never produced anything to equal, in terms of sheer formal inventiveness, material economy and rationality, or elegance, Breuer's Wassily chair or Mies's MR chair.

1930 and After

After 1929 the partnership made few significant new furniture designs in this genre, although they made some variants of existing designs and Perriand made some new designs for tubular steel furniture on her own account **[28]**. One reason may have been that what Le Corbusier had defined as the 'anomaly' of furniture appeared to have been resolved: between them the chairs, tables and casiers provided a more or less definitive solution to the problem of 'equipping' the home. But other factors may need to be taken into account as well.

Le Corbusier's major architectural commissions of the early 1930s were institutional rather than domestic[80] and offered few opportunities of detailed control over the furnishing of the interior. And the economic depression of the early 1930s substantially reduced the market for luxury furniture (into which category the partnership's designs inevitably fell) and rapidly undermined the apparent certainties of the 1920s on questions of materials and methods of production. Conventional furniture-making materials and techniques could be employed at a fraction of the cost of 'modern' materials and techniques as Perriand herself would soon acknowledge. Avant-garde colleagues and friends were astonished at the inclusion of a modest wooden chair with a rush seat and back in the partnership's exhibit at the Brussels International Exhibition in 1935 **[29]**. It was, as Perriand later noted 'an unexpected type of chair in that setting'. But its inclusion was no surrealist gesture; Perriand's aim was to show that:

> one can work honestly in any material, taking into account the context, the means of production, and the requirements. It turned out that this chair could be manufactured for next to nothing by artisans without sophisticated machinery.[81]

This openness to the potential of traditional materials and methods of production, to the

28 Charlotte Perriand, Low chair, *c.* 1936, exhibited in 'L'habitation d'aujourd'hui', Salon des Arts Ménagers, 1936/7. The design of the frame was based on a pilot's seat; the original had cushions for seat and back

29 Charlotte Perriand, 'La maison du jeune homme', Brussels International Exhibition, 1935; living-room with wooden chair with rush seat and back

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adoption of a kind of 'appropriate technology' for the job in hand, was to mark Perriand's later work. Nor was it really new; though J.-L. Sert later recalled Perriand's interest at this time in articles of humble, peasant origin, she had long been familiar, through family connections, with surviving regional and artisanal traditions. The values of such traditions, temporarily overlaid by the rhetoric of a modern, mechanized, urban culture would begin to reassert themselves in her later work.

In the 1930s Le Corbusier too would have to have a new perception of the relationships between urban and rural, industrial and artisanal, mechanical and natural;[82] it was reflected partly in the emergence of 'primitive', vernacular and organic elements in his work. His domestic work reflected this shift of emphasis most clearly: local materials and techniques began to be combined with industrially-produced prefabricated elements. The 'confrontations' of materials were less obviously paradoxical: the Petite maison de weekend had a simply vaulted interior in which the roughness of rubble walls and roughly-pointed brickwork was played off against smooth, warm-toned plywood cladding. Le Corbusier would characterize this as 'a return to essentials'.

In the 'machine for living in' of the 1920s a muted Purist palette—yellow and red ochre, ivory, burnt sienna, pale blue and dark green—had been used to provide a naturalistic counterpoint to the crisp, textureless, mechanical character of thin concrete, flush-fitting steel and glass doors, and aluminium fronted casiers. As the constructional materials became more 'naturalistic', colours tended to become more 'abstract' and primary. The 'vernacular' did not replce the 'machine aesthetic'—rather they came to be combined.

Certain of the principles of furniture design established in the 1920s would survive in the post-war work: the notion of 'equipping' the interior with a range of built-in storage would still seem valid—though in need of some overhaul in the light of post-war assumptions—when it concerned the standard dwelling in the first of the Unités d'habitation **[30]**.[83] But when it came to the question of furnishing the individual house the *provisional* character of the resolution of the problem of furniture in the 1920s would be revealed. Of the Jaoul houses, Le Corbusier would write:

30 Charlotte Perriand, Prototype kitchen for Le Corbusier's Unité d'habitation, Marseilles, 1950. Perriand described her aim as 'To integrate the kitchen with the living-room, in the form of a kitchen-bar, with clearly defined functions, but which would allow the housewife the opportunity to talk to her friends, her family . . .'

In the matter of furniture it can be affirmed that the future is not sketched out . . . Here, in the Jaoul houses, the problem of furniture has not been dealt with.[84]

CHARLOTTE BENTON
Cambridge

Notes

The substance of this article is based on two earlier articles ('Le Corbusier: L'aventure du Mobilier . . .', *Decorative Arts Society Journal*, no. 6, 1982 and 'Le Corbusier: Furniture', in *Le Corbusier: Architect of the Century*, Arts Council, London, 1987); however, I have here revised the notes extensively. I have also tried to take into account relevant material from the new literature on Le Corbusier published in connection with the recent centenary celebrations of his birth.

The following abbreviations are used in the notes:
FLC refers to the Fondation Le Corbusier, Paris.
cdF refers to the Bibliotheque de la Ville in La Chaux-de-Fonds.
OC followed by a volume number refers to Le Corbusier's multi-volume *Oeuvre complète*.

1 Siegfried Giedion, *Bauwelt*, no. 33, 1933.

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2 On Schneck, see T. Benton, 'Background to the Bauhaus' in T. Faulkner (ed.), *Design 1900–1960: Studies in Design and Popular Culture in the Twentieth Century*, Newcastle upon Tyne Polytechnic, 1976, in which the teaching of Schneck at the Stuttgart Crafts School and his publications are discussed.

3 The Haus am Horn.

4 On Breuer see C. Wilk, *Marcel Breuer: Furniture and Interiors*, Museum of Modern Art, New York, 1981.

5 The competitive circumstances surrounding the designs of cantilever tubular steel chairs for this exhibition are documented elsewhere in this issue by Otakar Máčel.

6 Hans Schmidt, 'Die Wohnung', *Das Werk*, vol. XIV, 1927; this extract cited from C. Benton (ed.), *Documents*, The Open University Press, 1975, p. 21.

7 Paradoxically, given that the volume of his built work was considerably greater by this stage than that of many of his contemporaries and that he had recognized the problem of the 'anomaly' of furniture early on.

8 *OC*, vol. 1 illustrates only some of the work of the 1920s; see pp. 101 and 157.

9 In a letter to Anatole Schwob of 24 April 1917, Jeanneret wrote: 'Depuis près de huit ans je m'interesse au question de l'intérieur', CdF, LC ms. 109. The omission of the early furniture, as well as the early architectural designs and town-planning schemes, does not seem to have been a casual oversight on Le Corbusier's part but, rather, a deliberate act of censorship designed to ensure that only the fully-formed, recognizably Corbusian, normative solutions would be transmitted to posterity.

For accounts of Jeanneret's work in this period see the following: *Archithese*, 2–83 (special issue, 'La Chaux-de-Fonds und Jeanneret/Le Corbusier'); *Le Corbusier: Early Works by Charles-Edouard Jeanneret/Gris*, Architectural Monographs 12, Academy Editions, London/St. Martin's Press, New York, 1987; H. A. Brooks, 'Formation: L'Ecole d'art de La Chaux-de-Fonds' in J. Lucan (ed.), *Le Corbusier: une Encyclopédie*, Centre Pompidou/CCI, Paris, 1987, pp. 156–61; L. M. Colli, *Arte artigianato e tecnica nell poetica di Le Corbusier*, Laterza, Rome, 1981, ch. 4; J. Gubler, 'La Chaux-de-Fonds', *Inventaire Suisse de l'Architecture 1850–1920*, Société d'Histoire de l'Art en Suisse, 1984; M. P. M. Sekler, *The Early Drawings of Charles-Edouard Jeanneret (Le Corbusier) 1902–1908*, Garland, New York & London, 1977; P. V. Turner, 'The beginnings of Le Corbusier's education', *Art Bulletin*, June 1971, pp. 214–24; P. V. Turner, *The Education of Le Corbusier*, Garland, New York & London, 1977. For an account of the general architectural background see also J. Gubler, 'Switzerland: the temperate presence of Art Nouveau' in F. Russell (ed.), *Art Nouveau Architecture*, Academy Editions, London, 1979.

10 Cited in J. Petit, *Le Corbusier lui-même*, Rousseau, Geneva, 1970, p. 45.

11 On this see particularly Gubler, 'La Chaux-de-Fonds', op. cit., and Sekler, op. cit.

12 Jeanneret, together with other former pupils of its founder, later taught in the 'Nouvelle section'. He was also associated with the Ateliers d'art réunis, founded in 1910, which included other members of the L'Eplattenier circle, and which took on a wide range of local commissions, from mural decoration, through the design of jewellery and furniture, to the decoration of tombs in the local cemetery. Jeanneret was also amongst the founder members of L'Oeuvre, a *suisse-romand* organization set up in 1913 to bring together local artists and artisans with local industrialists and commercial organizations.

13 'Il voulut faire de moi un architecte. J'avais horreur de l'architecture et des architectes . . . [mais] j'acceptai le verdict et j'obéis; je m'engageai dans l'architecture', Petit, op. cit., pp. 25, 28.

14 On the early furniture design see A. Rüegg, 'Equipment: Les contributions de Le Corbusier à l'art d'habiter 1912–1937: de la décoration intérieure a l'équipement', in Lucan, op. cit., pp. 124–35 (especially pp. 124–6), and A. Rüegg, 'Charles-Edouard Jeanneret, architecte-conseil pour toutes les questions de décoration intérieure', in *Archithese*, 2–83, pp. 39–43. One problem for the whole of the La Chaux-de-Fonds period may be to distinguish between designs made by Jeanneret and made up for him by local craftsmen, work bought from local *antiquaires*, and 'bespoke' versions of readymade furniture—including the Maples 'club' armchairs of the type to be found in his interiors of the 1920s—which Jeanneret selected and bought elsewhere (probably mostly in Paris) on behalf of clients. Jeanneret's view of his specialism in respect of the last is well illustrated in a letter to Anatole Schwob, in which he tried to persuade Schwob to take items ostensibly selected especially for him: 'Ce sont des relations particulières, personelles, qui m'ont permis d'obtenir quantité d'articles edités en quantité *limitée chez et par des artistes hors ligne* . . . J'offre volontiers à mes clients de profiter de mois et d'années de recherche dans la capitale de l'industrie d'art et dans les expositions spéciales; *je ne fournis jamais la source* . . .'; letter of 24 April 1917, CdF LC ms. 109.

15 See Sekler, op. cit., fig. 97.

16 In fact Jeanneret was commissioned, at L'Eplattenier's prompting, to make a report on the applied arts in Austria and Germany, which was later published; C.-E. Jeanneret, *Etude sur le mouvement d'art décoratif an*

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Allemagne, La Chaux-de-Fonds, 1912. At this time Jeanneret saw Germany as taking a leading role (compared with France) in the applied arts. He knew the work of the Deutsche Werkstätten: at Hellerau he was much impressed by the ambience, by the modern processes and by the organization, as well as by many of the products. He knew, at first hand, of Behrens's work for AEG and was also aware of Behrens's efforts in the field of typographic reform. Jeanneret also admired Bruno Paul's atelier and was particularly interested in Paul's system of employing talented graduate students as assistants. It is not altogether clear whether Jeanneret was interested, at this stage, in Paul's ideas about unit furniture, although he owned a copy of Paul's *Typenmöbel für Stadt und Land* (Munich, n.d.), which he presumably acquired during his stay in Germany (listed in P. V. Turner, 'Catalogue de la bibliothèque de Le Corbusier avant 1930', typescript, FLC, 1970). A notebook entry of 1910 comments on the Munich decorators exhibit at the Salon d'Automne in Paris in 1910: 'Manifestation remarquable dont je me réjouis de lire l'effet dans les journaux parisiens', cdF, LC ms. 86 (Carnet II).

17 Quoted in Sekler, op. cit., p. 235.

18 Which was influentially transmitted not only through first-hand contacts and via the international students of these architects, but also through the illustrations in contemporary periodicals such as *Der Architekt*, *Die Fläche*, and *Ver Sacrum*.

19 Le Corbusier returns to the problem of the debasement of folk culture in the era of mechanical reproduction in the chapter 'Usurpation: Folklore' in *L'art décoratif d'aujourd'hui* (first published in 1925), Vincent, Fréal & Cie., Paris, 1959, pp. 27–37.

20 Subsequently interest in French work seems to have supplanted his interest in German design; notes and sketches made on trips to Paris indicate that he was much impressed by the output of the new art furnishing departments of the *grand magasins*: 'There is a big department store [Primavera] with the most beautiful products that can be demanded of the present age, handmade and for sale very cheap . . . here there is Life, flexibility, tradition . . . taste. It's taste and not simply a modern style . . .', *Le Corbusier Sketchbooks*, Thames & Hudson, London, 1981, vol. 1, no. 96–7.

21 Paul Mebes, *Um 1800: Architektur und Handwerk in letzten Jahrhundert. Ihrer traditionellen Entwicklung*, Munich, 1908. (The book clearly enjoyed a considerable popularity in the period following the war as well, since it was reprinted at least twice by Bruckmann Verlag, Berlin, in 1918 and again in 1920.) Jeanneret may well have been familiar too, by this stage, with Loos's enthusiasm for the artefacts of this period.

22 See *Le Corbusier: Early Works . . .*, pp. 74–81 and pp. 82–91, for descriptions. For a discussion of Jeanneret's early clients see J. Gubler, 'Die Kunden von Jeanneret', *Archithese*, 2–83, pp. 33–8.

23 See Rüegg, 'Charles-Edouard Jeanneret, architecte-conseil . . .'. Of course an enthusiasm for Biedermeier at this time was not particularly unique; as Hans Poelzig noted: 'The Biedermeier style was once considered petty bourgeois kitsch, while the products of Jugendstil were high art. Then the tables were turned, Jugendstil became kitsch and Biedermeier was treasured as folk-art . . .', in 'Der Architekt', *Bauwelt*, no. 24, 1931; here quoted from T. & C. Benton with D. Sharp (eds.), *Form and Function*, Crosby Lockwood, Staples/Open University Press, 1975, p. 59.

24 Jeanneret made no bones about the fact that he considered his clients' existing furniture a problem. In a letter to Mme Schwob he wrote: 'il est évident que les meubles de la salle à manger sonnent faux et le dressoir ne pourrait-il simplement disparaître?'; 8 September 1919, cdF, LC ms. 112. In a similar vein he wrote to another client: 'Ne regrettez pas le grand bahut qui occupait la salle à manger . . . il écrasait totalement l'espace . . .', quoted by Rüegg 'Equipement . . .' in Lucan, op. cit., p. 126.

25 Evidence in the Jeanneret-Schwob lawsuit, quoted in M. Favre, 'Le Corbusier in an unpublished dossier and a little known novel', in R. Walden (ed.), *The Open Hand: Essays on Le Corbusier*, MIT Press, 1981, pp. 96–112.

26 Of it Jeanneret wrote to the client: 'dès le debut des travaux, l'idée d'une maison conçue avec rusticité s'éffaçait du tableau . . . j'avais commandé à Lausanne les plus belles briques que l'on fabrique en Suisse . . .'; letter to Anatole Schwob of 24 April 1917, cdF LC ms. 110.

27 Jeanneret attempted, unsuccessfully, to associate himself with the programme of the Paris-based group 'La renaissance des cités'.

28 See *OC*, vol. 1, pp. 23–6; H. A. Brooks (ed.), *The Le Corbusier Archive*, vol. 1 'Early Buildings and Projects, 1912–23', Garland, New York & London/FLC, Paris, 1982, pp. 21–77.

29 See, for example, the furniture designed for Ditisheim (1916), the desk designed for Jeanneret's mother (*c.* 1916) and furniture designed for the Schwob family (1917/18), illustrated in Rüegg, 'Charles-Edouard Jeanneret, architect-conseil . . .', pp. 40–1.

20 The theme of a double height living-room overlooked by a bedroom gallery would be developed and refined in interiors of the 1920s, notably that of the Esprit Nouveau pavilion.

31 Letter of 8 September 1919, cdF LC ms. 112.

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32 Julian Caron, 'Une villa de Le Corbusier 1916', *L'Esprit Nouveau*, no. 6, 1922, pp. 679–704. An English translation of the article is to be found in *Oppositions*, nos. 15–16 (special issue on Le Corbusier 1905–1933), 1979, pp. 186–97.

33 The phrase 'épuration par le vide' was coined by Ozenfant in his *Mémoires* (Seghers, Paris, 1969) to describe the principles on which he renovated a flat in the r. Godot de Mauroy in Paris (opposite the bistrot whose interior provided the model for Le Corbusier's Citrohan and later Esprit Nouveau pavilion designs) into which he moved in 1918.

34 The need for a completely fresh start after the war was also a significant factor in this emphasis on a tabula rasa; see the opening of Ozenfant and Jeanneret *Après le Cubisme*, Editions des Commentaires, Paris, 1918, p. 11, 'La Guerre finie, toute s'organise, tout se clarifie et s'épure; les usines s'élevent, rien n'est déjà plus ce qu'il était avant la Guerre'.

35 Ozenfant, op. cit.

36 This is evident in projects for small-scale working-class housing as well as in those for bourgeois villas; see, for example, H. A. Brooks, *The Le Corbusier Archive*, vol. 1, p.165, an interior of the Cité ouvrière, Saint-Nicholas-d'Aliermont, 1917 (FLC 22378); p. 239, interiors of the Cité ouvrière, Manufacture de Saint Gobain, Thourotte, 1920 (FLC 7862; FLC 7663); and p. 405; interior of the Villa Besnus, Vaucresson, 1922 (FLC 9208).

37 Ibid., p. 297, Maison d'artiste, 1922 (FLC 30198).

38 Ibid., p. 458, Maison de Weekend, Rambouillet, 1922 (FLC 30069); p. 262, Villa Berque, Villa Montmorency, Paris, 1922 (FLC 9316).

39 As in La Roche's library in the Villa La Roche, and see also the sketch of the living room for the Villa Meyer project, 1925, illustrated in *OC*, vol. 1, p. 90.

40 See, for example, *OC*, vol. 1, p. 42.

41 As an example, see the photograph of the dining-room in the La Roche house, *OC*, vol. 1, p. 67. For Le Corbusier's description of the use of colour, see *OC*, vol. 1, p. 60. The intended effect was underlined by the fact that the bentwood chairs were usually painted (as were, sometimes, the later tubular steel pieces).

42 In R. Walden, 'New light on Le Corbusier's early years: the La Roche-Jeanneret houses', in R. Walden (ed.), *The Open Hand: Essays on Le Corbusier*, MIT Press, 1977, p. 145.

43 See *OC*, vol. 1, p. 60.

44 An obvious case in point here was the Villa Stein, of 1927–8. Although the clients Michael and Sarah Stein were enthusiastic collectors of modern paintings, they also owned a collection of Renaissance furniture. The architectural critic Julius Posener reports Le Corbusier as having said to him, on the occasion of a visit to the house in 1934, 'the Steins have put in such terrible furniture that it ruins the space'; see J. Posener, 'E i mobili? Me lo chiede?', *Rassegna*, no. 3, 1980 (special issue on the clients of Le Corbusier). The 'official' photographs of the house were taken before it was occupied, but a number of the Stein family's photographs which survive show the interiors as furnished by them. See, for example, FLC, Garches, Fonds 1: L2(5)15, L2(5)16, L2(5)18, L2(5)31, L2(5)33.

45 La Roche letter to Le Corbusier, New Year 1927, FLC La Roche files.

46 Letter René Guiette to Le Corbusier, 12 April 1955, FLC Guiette files.

47 See the chapters entitled 'L'aventure de mobilier', in Le Corbusier, *Précisions* (first published 1930), Vincent, Fréal & Cie., Paris, 1960, pp. 105–22 and 'Besoins-types, meubles-types' in *L'art décoratif d'aujourd'hui*, pp. 69–79. The correspondences of view with those expressed in a near contemporary article by Ernö Goldfinger and André Szivessy (André Sive) are quite striking; see 'Meubles: les sièges', in *L'organisation ménagère*, October 1928. The sources of such discussions are not clear. It is worth noting, given Le Corbusier's interest in Loos, that Loos had made a connection between Taylorism and the domestic environment in an essay of 1898, as well as distinguishing different categories of chair for different kinds of activities: 'At present we demand from a chair not only that we may rest while sitting on it, but moreover that we may become rested while sitting on it. "Time is money." Resting thus had to become a specialized field. Resting after an intellectual endeavour demands a totally different position from relaxing after outdoor exercise . . . The English and Americans . . . have really perfected the art of relaxation . . . According to the principle that every type of relaxation demands a different type of chair, the English room never contains one consistent type of chair. All of the different types are represented in one and the same room'. (From 'Furniture for sitting' in A. Loos, *Spoken into the Void: Collected Essays*, MIT Press, 1982.) M. McLeod has discussed the general influence of Taylorism on Le Corbusier's architecture in her article '"Architecture or Revolution": Taylorism, technocracy and social change', *Art Journal*, vol. 43, no. 2, 1983, pp. 132–47. For a general discussion of Taylorism in France see J. Merkle, *Management and Ideology: the Legacy of the International Scientific Management Movement*, University of California Press, 1980, especially for Part II, ch. 5 'Romantic rationalism and the growth of French scientific management'; at the time of writing I have not been able to consult a copy of G. C. Humphreys,

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Taylorism in France 1904–1920: The Impact of Scientific Management on Factory Relations and Society, Garland, New York & London, 1986.

48 See *Précisions*, p. 108.

49 *OC*, vol. 1, p. 100.

50 Notably an industrial 'security' window.

51 See *L'Art décoratif d'aujourd'hui*.

52 See Le Corbusier, *Vers une Architecture* (first published 1924), Vincent, Fréal & Cie., Paris, 1959. The image was the antithesis of the type of liner cabin 'decorated' by the contemporary Parisian *artiste-décorateurs*.

53 See *L'art décoratif d'aujourd'hui*. An interest in the principles on which the 'Innovation' trunk was based can be found in a sketch by Jeanneret of a cupboard interior or trunk, dating from 3 June 1913; cdF, LC ms. 88 (Carnet II) pp. 53–4. The traveller's trunk seems to have been a source of interest to other Parisian designers at around this time, notably to Pierre Chareau and Eileen Gray; in both cases they seem to have been more interested in the implied spatial and formal transformations created by the object when open or closed than in the principles of organization and 'classified' storage which the model represented for Le Corbusier.

54 See *OC*, vol. 1, pp. 100–2; *L'Almanach d'architecture moderne* (first published 1926), Editions Connivences, Paris, 1989. Some of the furniture exhibited was borrowed from the La Roche house.

55 It should be noted that neither the idea of the classification of the contents of storage furniture, nor the adoption of standardized, modular dimensions were unique to Le Corbusier—a number of architects and designers in Germany, and in Denmark Kaare Klint, were working along similar lines, but their conceptions of the units as furniture perhaps remained more conventional than Le Corbusier's.

56 See *L'Almanach d'architecture moderne*.

57 See *Précisions*, pp. 118 and 120.

58 From 'Manuel de l'habitation', *L'Esprit Nouveau*, no. 9, 1924, p. 984.

59 See, for example, the illustration labelled 'une salle à manger' in the Immeubles-villas, 1922, *OC*, vol. 1, p. 42, and a sketch of the La Roche-Jeanneret houses, *OC*, vol. 1, p. 60.

60 Variants of the type (sometimes sold as an ordinary armchair rather than as a chaise-longue) were sold by the furnishing departments (rather than the 'art' furnishing sections) of the *grands magasins* in the 1920s; see, for example, the catalogues of the Galeries Lafayette and Grands Magasins du Louvre. As an example, a version in 'Hêtre, façon acajou' with velours cushions, sold for about 180 francs as armchair, the chaise-longue version for about 100 francs more. Quite possibly Le Corbusier did not use it because none of the readily available off-the-peg models was quite 'pure' enough in form; and perhaps they could not be bought in finishes appropriate to the 'Purist' interior. (The Maples leather-upholstered club chairs, on the other hand, could be upholstered to the client's choice in a variety of specialist leathers.)

61 Advertised in *L'Esprit Nouveau*. Dr Pascaud's description of it appears in 'Après le surmenage . . . le Surrepos', *L'organisation ménagère*, April 1927, p. 50.

62 Although negotiations were begun for a variant to be used in the Esprit Nouveau pavilion; see FLC EN files.

63 Of the inspiration for the 'machine à repose', the chaise-longue, Le Corbusier wrote 'J'ai songé au cowboy du Far-West, fumant sa pipe, les pieds en l'air, plus hauts que la tête, appuyées sur le bord de la cheminée: repos total . . .'; *Précisions*, p. 120.

64 See, for example, *OC*, vol. 1, p. 91, interiors of the Villa Meyer project, and p. 183, interiors of the Wanner apartments project, 1928.

65 Letter to Alfred Roth, July 1927, 'Pour les meubles nous allons vous envoyer dans 8 jours les dessins des premiers fauteuils. Nous avons fait exécuter ici les modèles en tube de fer. Dès que ces modèles en seront au point, vous en recevrez le dessin', quoted in A. Roth, *Begegung mit Pionieren*, Birkhäuser, Basle, 1974, p. 34. The nickelled or chromed tubular steel bed frames which appear in contemporary photographs of the interior of Le Corbusier's double house at the Weissenhof siedlung were designed by Roth.

66 Notably in relation to Le Corbusier's houses of which the critic Willi Lotz wrote: 'Were one to put heavy, formally pretentious furniture in there, the space would be killed. In Le Corbusier's case all the furniture must be such that it takes nothing away from the space, that the space flows freely, with no check to its dynamic', *Die Form*, vol. ii, 1927, pp. 161 ff.

67 On Perriand see Charlotte Perriand, *Un art de vivre*, Musée des arts décoratifs/Flammarion, Paris, 1985; M. McLeod, 'Charlotte Perriand: her first decade as designer', *AA Files*, no. 15, 1987, pp. 3–13.

68 Although the dining-room exhibited at the Salon des Artistes-Décorateurs in 1928, which included tables and the revolving chairs, was attributed to Perriand alone, she has—in the past—insisted on the collaborative nature of the designs attributed to the partnership. McLeod (see note 67) records Perriand as saying that Le Corbusier set the problem.

69 La Roche in 1928. The Church installation seems to have been begun in the Spring of 1928 and may not have been completed until early the following year. Although the La Roche house had been completed by 1924 the lighting and furnishing of the living-room/

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gallery was left unresolved. Both clients complained about the furniture—La Roche that the prototype chaise longue he was offered was damaged, whilst Church disputed the architects' fees for the furniture designs. See T. Benton, *The Villas of Le Corbusier 1920–1930*, Yale University Press, 1987.

70 *L'art décoratif d'aujourd'hui*, p. 47: 'il n'y aucune raison pour que le bois demeure la matière première essentielle du mobilier.'

71 C. Perriand, 'Wood or metal?', *The Studio*, vol. 97, 1929, pp. 278–9; see 'Documents' in this issue.

72 'L'usine d'avions et de carrosserie emploie le bois suivant des méthodes si nouvelles, que le meuble de bois n'a plus le droit d'être conçu comme auparavant . . . Sollicitée, l'industrie proposera . . . des compagnons nouveau: l'acier, l'aluminium, le ciment . . . Puis le faubourg Saint-Antoine enverra ses apprentis à Levallois, à Issy-les-Moulineaux, aux usines d'avions et d'autos . . .', *L'art décoratif d'aujourd'hui*, p. 47.

73 It was the aviation industry which introduced (or re-introduced) authentic techiques of oriental lacquering which were also taken up by *artistes-décorateurs* such as Jean Dunand and Eileen Gray around the beginning of the second decade of the twentieth century. For a description of the process of lacquering see B. Dunand, 'Sur l'esthétique du laque', *Etudes pholosophiques*, July–Dec. 1949, pp. 445–60.

74 Quoted in M. di Puolo, M. Fagiolo, M. L. Madama, *La machine à s'asseoir: Le Corbusier, Charlotte Perriand, Pierre Jeanneret*, De Luca, Rome, 1976.

75 Quoted by A. Rüegg in 'Anmerkungen zum "Equipement de l'habitation" und zur "Polychromie intérieur" bei Le Corbusier', in S. Pagnamenta and B. Reichlin (eds), *Le Corbusier: La ricerca paziente*, Citta di Lugano/FAS Ticino, 1980, pp. 151–67,.

76 On Thonet generally see C. Wilk, *Thonet*, Barron's, New York, 1981. Although Wilk indicates that a company-designed rocking version of the chaise-longue was illustrated in a Thonet leaflet of the early/mid-1930s, no extant examples have come to light.

77 See Perriand in M. di Puolo, M. Fagiolo, M. L. Madama, op. cit.

78 *Précisions*, p. 121.

79 Giedion described it thus: 'In type this chair derives from the traditional Thonet model such as Le Corbusier had shown in his pavilion, but it has by now evolved as a creature in its own right'; S. Giedion, *Mechanization Takes Command*, OUP, London & New York, 1949.

80 For example, the commissions for the Centrosoyus in Moscow, the Pavillon Suisse and the Armée du Salut in Paris.

81 Perriand, *Un art de vivre*.

82 His interest in the 'primitive' had been rekindled in the late 1920s, on his trips to S. America and N. Africa.

83 Notably in the location and detailing of the kitchen.

84 *OC*, vol. 6, p. 206.

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