Tempered Clothing

TEMPERED CLOTHING

—an investment
in good appearance

Published 1921 by
The HOUSE *of* KUPPENHEIMER

Plate I

ADMINISTRATION BUILDING
B. KUPPENHEIMER & CO., CHICAGO

Cloth refinishing department occupies one entire floor of this building

The Idea

Kuppenheimer Good Clothes make their great appeal through superior design and craftsmanship. Materials are usually taken for granted. It is true that any other clothing manufacturer can offer the same fabrics if he is willing to take the trouble. This is the story of supreme willingness to "take the trouble" and to lay the basis of honest materials for artistic tailoring.

Why Kuppenheimer Clothing Is More Than Mere Clothing

Foundations

DID you ever realize that most failures in this world come from poor foundations? Of course you have heard in church of that house built upon the rock which stood firm while its neighbor built upon sand was swept away. And you have read of pyramids and fabrics which have resisted the ravages of forty centuries in Egypt. And the success magazines tell us of men who have shot up into fame because the testing time showed they were built of good stuff. But in spite of all this information and these preachments how much do you really know about "honest materials,"

"solid foundations," and their relation to real and permanent values? How many sellers or wearers of clothing know anything definite about whether proper foundations are put into their clothes and how they are put there?

It is a safe guess that to the average man cloth is cloth, nothing more. Just as pigs were pigs in the story—even if they were rats or elephants. He would think it unmanly probably to be a judge of fabrics or to know anything except his choice in style, color and price. The discriminating man is interested in knowing what makes his soup so tasty or why the roast has such a wonderful flavor or how his wife makes her rolls so light; and no sane man would fail to watch the builders of his house to see that they put real cement in its foundation and seasoned lumber into its walls. But to the subject of clothing—one of the three fundamental human needs—men ordinarily bring much less understanding and informed interest than to either food or shelter. To be sure just now some men

are beginning to show an interest in fabrics.

"All Wool"

Most men have read or heard enough to be caught by the phrase "all wool." What more could you want? What more honest? What more safe? Yet "all wool" is almost as vague a term as "democracy" or "cooperation." Said of any given piece of cloth it merely means that it contains no cotton or hemp or wood pulp or glass or asbestos or any of the other substances workable into cloth. That cloth may be entirely of reworked wool or it may be half new wool and half reworked, or any one of a dozen rates of mixture.

Wool Plus Workmanship

The real question after all is not merely one of wool but of textile workmanship: not merely *what* is put into a fabric but *how*. For fifty odd years The House of Kuppenheimer has been building up the merchandising experience and critical judgment which enable it to

offer its customers the very pick of both foreign and domestic looms.

Honest Value the Foundation of Style

The average man has a pretty clear eye for *style*, and the tailoring industry caters to that desire. But the honest clothier knows that all the style in the world can never take the place of real value as a basis for public confidence. While it is perfectly true that stage "properties" and the art of camouflage have achieved miracles of illusion, in the one case it is a trick of war, in the other it is frankly recognized and paid for as dramatic illusion. Sound business could never be run on that principle. *Caveat emptor*—let the buyer beware—belongs to the Stone Age of business.

Every people has a proverb more or less to the effect that you cannot make silk purses out of sows' ears. The clothing industry accepts the proverb and translates it thus: "All the fine tailoring in the world can't make poor cloths stand up."

This of course does not in the least

minimize the tailor's art. It merely emphasizes the fact that distinguished and enduring craftsmanship can only express itself through sound and honest materials. The high-grade clothier sells style and perfection of finish. But style is like the unusual mind: coupled with constitutional soundness it becomes genius; with an inadequate and unsound basis it degenerates into queerness or downright craziness. Style on cheap clothing materials is insolence and mockery; on sound materials it has the enduring and satisfying character of real art. Rhinestones will never become diamonds no matter how carefully cut or set. The winner of a marvelous "gold" brooch from the country fair "wheel of fortune" is lucky indeed if the gold hasn't all rubbed off in his pocket before he reaches home. Cheap stylish clothing has all the effect of a gaudy stucco palace at an Exposition Midway—grotesque, tawdry, evanescent. Honest style is like a fine old cathedral or chateau—noble in architectural design, solid in materials, conscientious in craftsmanship.

Kuppenheimer customers say that they can buy identical fabrics from other manufacturers, but that for some reason or other Kuppenheimer clothes after a period of wear look better and stand up better. The reason is two-fold: fine tailoring based upon solid fabrics. Fabrics may superficially appear identical, named by the same name, made by the same loom, yet in the wearing prove to be incredibly different. Why? That's our story.

"*Survival of the Fittest*"

So cloth isn't just cloth. It may be made of either good, bad or indifferent materials. But taking even the best of cloth as it comes from the mills can the clothing manufacturer use it direct or must he work it up? Very little cloth as it is turned out of the mills is directly available for high grade clothing. To The House of Kuppenheimer it is really just "raw material," even the finest silk or worsted or cassimeres, which must be processed in a dozen ways before being

cut up or tailored. It must run the gauntlet. The law of the survival of the fittest rules treatment of the raw cloth as it rules the finished garment. Not partly fit, nor fittest occasionally, nor fittest in fine weather, but fittest in all weathers and under all conditions and circumstances. Man has been favored in the evolutionary process of half a million years not because he was some darling of the gods but because he could "stand up" under all sorts of circumstances and adapt himself to new conditions or master them. Civilized clothing for civilized man must be built to meet a thousandfold more complex situation than ever bothered his cave-ancestors.

"*Tempered Cloth*"

Suppose we put it this way. Man has won out because he has been rightly *tempered.* All raw materials must more or less undergo this process of tempering or seasoning. We usually think of it only in connection with metals or wood or glass. But it is equally true or even

truer of clothing. Really fine clothing can be made only of *highly tempered cloth.* Not just cloth, nor all wool cloth, nor even virgin wool cloth, but tempered cloth. Tempered to meet varied needs. Some supple like a Damascus blade; some soft and fleecy; some glossy like the flanks of a Vermont Morgan; some firm and virile like an Airdale; some smart; some carefully negligé, some to suggest warmth, some sea shore coolness. Tempered to withstand sunlight and rain, the strains and stresses of vigorous manly life and the hard usage of amateur cleaners and pressers.

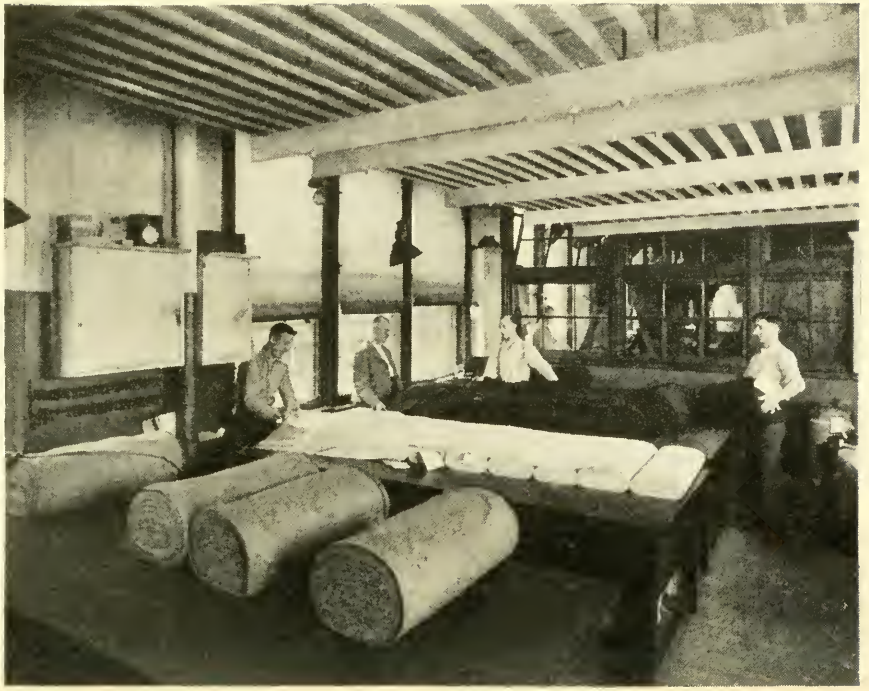
Results Talk

Results are supposed to speak for themselves without too much inquiry into how and why. But the process, the *how* of it is always interesting, and to both the business man and the scientist may prove even more interesting and valuable. Knowing how a result is achieved protects the possessor of such information against fraud and deception. It gives him a key,

a check-up and a scientific standard for testing or comparison. The House of Kuppenheimer for fifty years has been proud to be judged by its results. Believing that this long experience must have in it some intrinsic value for both science and sound business it proposes to go behind results and give some simple analysis of the tempering process which has contributed to the fame of its product. As so often happens it will be found here again that genius is not magic but the capacity for taking infinite pains.

The man who buys a Kuppenheimer garment gets not only clothing but *insurance*. For every Kuppenheimer garment carries its maker's guarantee. This guarantee or this clothes insurance is not a mere catch-penny advertising device. It is a genuine, real hundred per cent obligation upon the honor and resources of The House of Kuppenheimer. The only possible basis for this insurance is that "capacity for taking infinite pains" in the tempering and tailoring of the product.

Plate II



Preliminary examination of all piece goods: the matching for color and shade; checking up with mill samples.

Preliminary Examination

Space and invested capital by no means tell the story of careful manufacturing. But they at least are hints. The present lay-out of the Kuppenheimer refinishing department represents an investment of over $100,000 and covers an area of over 12,000 square feet. This space is crowded with valuable machines, many of them designed and built especially to order. To this department is sent every inch of suitings and a considerable part of the trimmings which enter into the average garment.

To begin with, every piece of suiting (woolen or silk or palm beach cloth) is given a preliminary examination by one of the greatest textile experts in the United States. Different pieces must be matched for color and shading, then checked up with mill samples for color, texture and quality. Later after being sponged and shrunk they are re-examined and "re-shaded" to check up any new variations due to moisture or heat. Next every piece of cloth is "perched," that is, slowly unrolled under a special,

Plate III

"PERCHING"

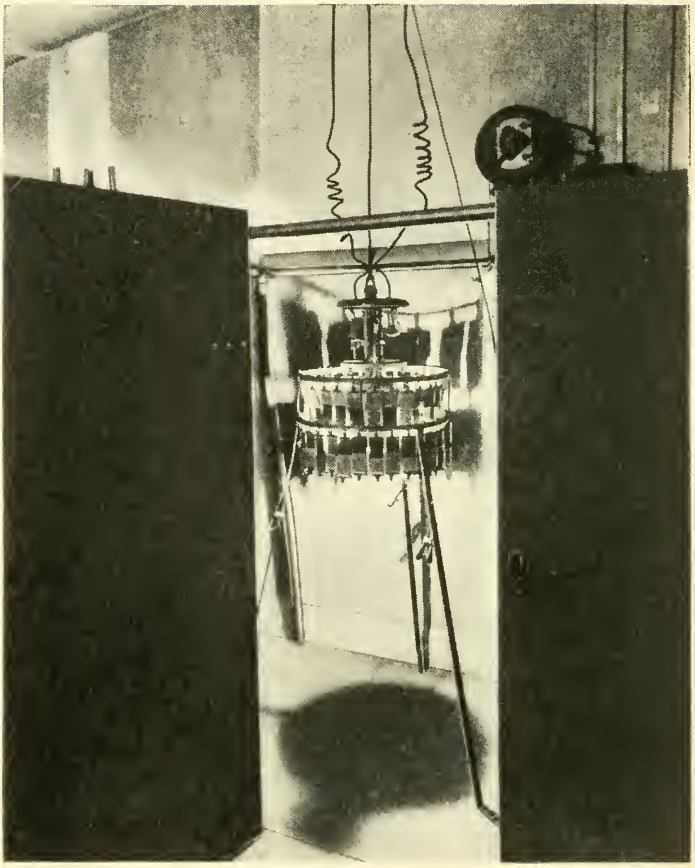
Inch-by-inch examination for defects in piece goods

constant light and given an inch-by-inch examination by experts. They watch for shading (particularly in piece-dyed goods), for spots, "mill shots," unevenness of weave, weak places, cuts, holes and other defects. Each defect is carefully marked by sewing on a piece of white tape as a guide and warning to cutters. Shading is so variable that one end of a 50 yard piece may be considerably "off" the other. In such cases the piece must be cut in two or more sections of like shade in order to secure evenness of color in each garment.

Running the Gauntlet

Then comes the real running of the gauntlet. First, the *light test*, for cloth must show not only evenness but integrity of color. Small samples are hung in a special metal cabinet under the rays of an 8000 candle power electric light for fifteen hours. This is the equivalent of ten days continuous July sunshine. Formerly tests were made in the open air. One series covered a whole year on a roof in Chicago and in a selected spot at Palm Beach.

Plate IV



LIGHT TEST FOR COLOR INTEGRITY

Small samples of cloth hung on circular frame enclosing 8000 candle power electric light

But the indoor light test has been proved much simpler, quicker and surer. Any fabric that survives this test is safely on its way through the tempering process. Yet here a word of advice may be offered in the interests of the "life-extension movement"as applied to clothing. Sellers and wearers of clothing should avoid leaving garments too long exposed to direct sunshine under glass in show windows or at home.

Next the *tensile test.* A small sample of cloth is clamped into the two jaws of a machine. These jaws are spread apart by screw pressure which registers in pounds upon a scale. When the cloth finally splits or tears the scale is read and the figures noted. Certain standard strengths have been set up. For example, good worsteds should stand 75 pounds tension on the warp (i.e. lengthwise), 50 on the filling (crosswise); cassimere from 45 to 50 on warp, 28 to 32 on filling; mohairs 35 on warp, 22 to 27 on filling; Palm Beach cloths only a trifle less than worsteds; silks much higher than woolen fabrics.

The *test by abrasion* is the most unique test (and the most recent, having been installed early this year). Of course it is impossible to predict with scientific accuracy the exact life of any particular fabric, if for no other reason than the wide ranges of treatment it will receive by different wearers. But the abrasion test helps in comparing the resistant qualities of fabrics from different mills and is valuable in setting up at least a minimum of wearing quality under any ordinary circumstances. The tester takes two strips of the same fabric. One is clamped firmly over a wooden half wheel; the other is stretched tight and pressed by heavy weights against it in such a way that when the wheel is set to rocking back and forth the two pieces will rub hard against each other. An automatic attachment registers the number of oscillations or rubs. At the end of a certain number of rubs the fabric is removed for inspection. This would represent, say, ordinary wear. A certain measured increase of the dose would quite outdo the hardest possible

treatment by an average customer. By experiment it will be possible to set up certain standards of wearing quality which must be met by the textile mills on such points as coat cuffs and elbows, pocket welts, trouser seams, strength of nap, tendency to shininess, changes in pattern. Of course, even the best of woolen cloth must not be asked to do the impossible. For example, there is a large demand for very soft fleecy overcoatings. They are graceful and luxurious to the touch and beautiful to the eye. Designed to meet the requirements of those who favor these qualities, it would be futile and unfair to expect them to give also the same endurance and wearing qualities of the close weave, smooth finish fabric. Sweet and sour, soft and hard, the maiden's skin and the athlete's muscle cannot be combined successfully. With these reservations in mind, however, it is still fair to say that, coupled with the light and tensile tests, this abrasion test gives the wearer the assurance that his cloth has passed a most rigorous inspection by the staff of "clothing

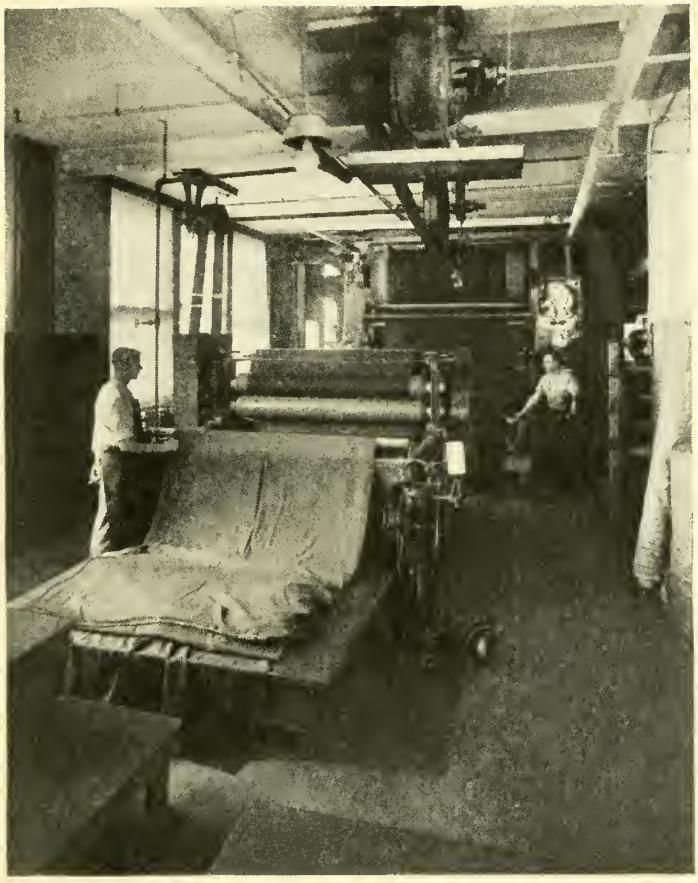
insurance" examiners. But that is only the beginning.

The Tempering Process

Once these preliminary inspections and sample tests are over, the real process of tempering (sponging, shrinking, finishing, shearing, pressing) begins. Of course all woolen fabrics are "finished" before leaving the mills. That is, after passing through the loom they must be "scoured" (cleaned in soap suds to remove grease), and treated to give them density, compactness, pile or "nap," and luster. When a fabric leaves the loom it looks like a plucked chicken; it is bare and harsh; all the strands show stringy, and the pattern is on the one hand too staring, on the other too foggy. The "finisher" puts on the feathers, so to speak, softens the rude lines and builds up a fibrous matted surface which not only improves appearance but adds to wearing quality. Incidentally this scouring and fulling and raising process shrinks the cloth considerably.

But in spite of all the mill processing the first class clothing manufacturer per-

Plate V



COLD WATER SHRINKING PROCESS (I)

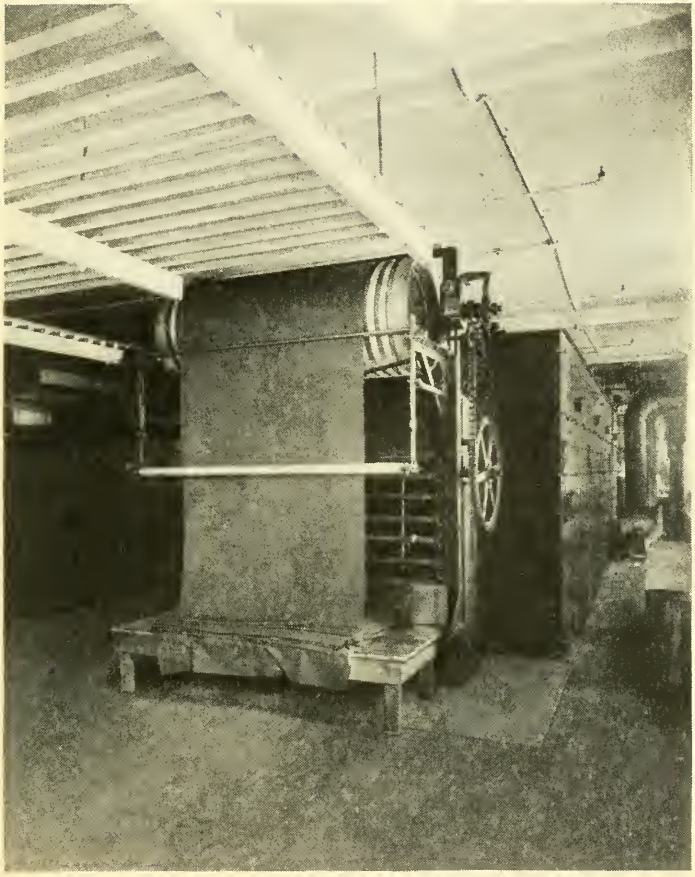
Cloth passing through cold water vat (in foreground), then over rolls and into hot-dry-air chamber (background)

sists in treating the mill product as "raw," and proceeds to temper and refine it still further.

A merchant tailor said to a customer recently, "Oh, but we cold water shrink all of our cloth!" As if that were all of it, and as if to imply that ready made clothiers couldn't or wouldn't indulge in any such extravagance of craftsmanship. But it is safe to say that there is not a single merchant tailor in America who has one quarter of the equipment or who can give a fraction of the care exercised habitually as a matter of routine by The House of Kuppenheimer or any other of the large manufacturers of high grade men's ready to wear clothing. Cold water is the smallest part of this refining process. Here again the nature of the material and the effect desired determine the treatment.

All worsteds, for example, are run through a bath of cold water, then rolled tightly on wooden rollers (crabs) and allowed to stand for a couple of hours to become thoroughly and evenly moistened;

Plate VI



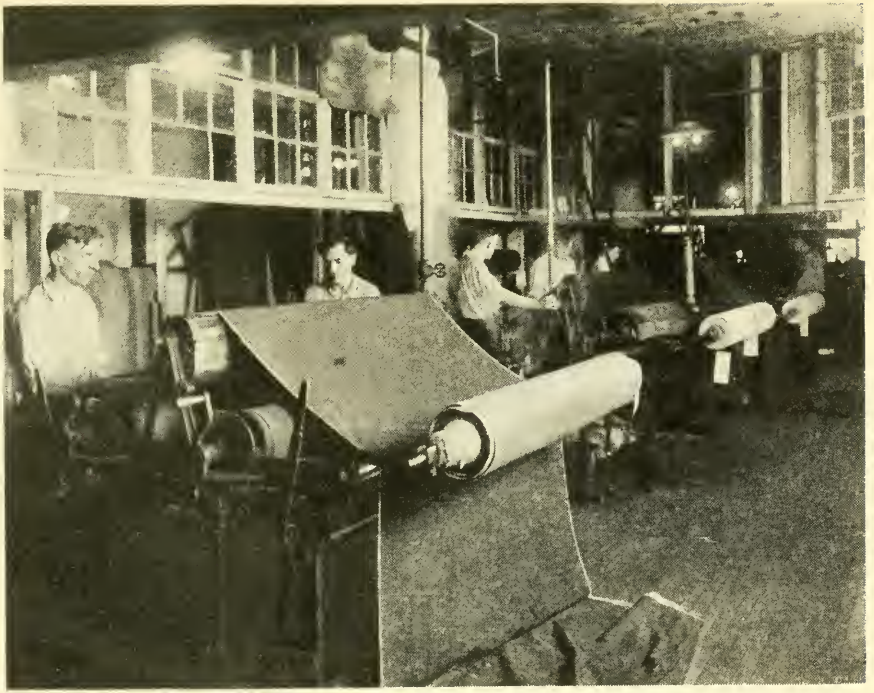
COLD WATER SHRINKING PROCESS (II)

Cloth coming out of hot-dry-air chamber (background) ready to be re-examined and steam sponged

then they pass through a hot-dry-air chamber which removes not only the sponging water but also atmospheric moisture. An ordinary 14 oz. worsted requires about twenty minutes for this drying process; other weights in proportion. All mohairs and palm beach cloths also are treated to this wet sponge. What this means to the wearer may be judged from the fact that a 60 yard piece of palm beach cloth shrinks nearly two yards, or double the old hand method of shrinking. A piece of knitted overcoating has been known to lose seven inches out of fifty in width alone!

Some fabrics are given a double dose of this treatment as a measure of precaution. It is not left to guess work, however, but to laboratory measurement. After sponging, a piece of the cloth is cut off and fitted exactly to a rectangular cardboard pattern about the length of a coat back or overcoat sleeve. Then it is sent to an expert presser who is instructed to manhandle it with his iron and wet rag. After he has done his worst the sample is

Plate VII



STEAM ROLL SPONGING

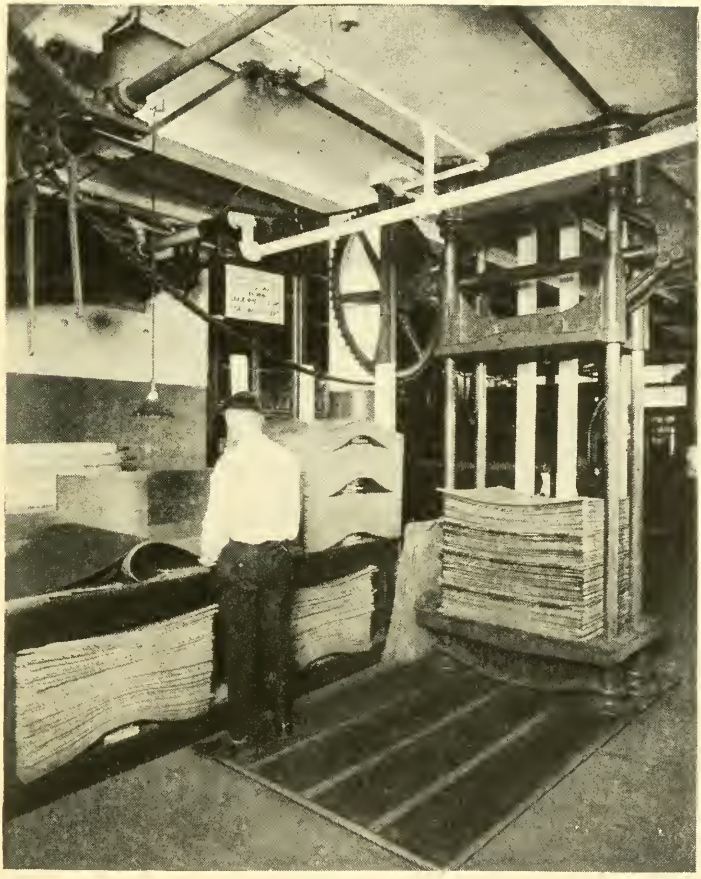
Cloth sprayed with live steam while being rolled tight. This process both shrinks and presses soft fabrics.

returned. Unless it still fits the pattern very closely the fabric is responged.

Woolens such as cassimeres or heavy overcoatings are not improved by wet sponging. They are tempered by being sprayed or boiled with steam. That is, they are run through machines which either literally spray the cloth as it passes through hot pressing rolls or roll it up under a tight cotton cover; in the latter case after steam has been forced through the roll for a few minutes it is allowed to stand over night to secure uniform spread of heat and moisture, cooling and shrinkage. The cloth is then pressed by hot rolls in order to give it proper luster and to "set" or "close" the pattern; that is, to give the proper damp-resisting "permanent wave" to every fiber and to insure that the fibers are meshed in such a way as to preserve both flexibility and toughness to the fabric.

Worsteds, mohairs and palm beaches receive this additional steaming and pressing after their cold bath. Usually, however, lustrous fabrics like serges and

Plate VIII



Ninety ton press with cardboard sheets and hot metal plates for pressing lustrous fabrics

worsteds are not roll-pressed. Instead they are folded over sheets of polished cardboard, then placed in a press between hot steel plates and given from 80 to 90 tons pressure for a whole night. This lays the pile flat and gives a fine smooth finish. Whereas ordinary cassimeres and overcoatings are steamed and pressed rolled, soft heavy-pile overcoatings (Montagnac, Kynoch, Gibson and Lumgear, Worumbo, etc.) must be treated by open steam sponging to keep the pile fluffy. The same machine is used as in the case of worsteds, but instead of setting the pattern and laying the nap, it achieves exactly the opposite result of plushiness or fleeciness by piling the cloth in loose folds instead of rolling it tight.

Fine gabardines and similar goods specially resistant to shrinkage are wet sponged and hung up in the open air to dry. When two thirds dry they are passed through a hot calender or circular "goose." The hot "goose" revolves about one third faster than the rollers which carry the cloth. This gives the sweeping

effect of a hand "goose" and shrinks the fabric as nothing else will.

Certain overcoatings are specially treated for luster, and shower-proofed; and even suitings are sometimes so treated at the particular request of customers.

All silks used for suitings are likewise specially prepared. The normal routine is to soak them from two to eight hours in clean cold water, then to hang them loosely to dry in the shade. Next they are spot-proofed and pressed by a unique process which gives them a lustre that is the despair of the silk mills.

Clothing and Civilization

A rough woven piece of woolen as it leaves the loom would do very well for a blanket, or it might be cut up into clothing. It would of course even in that crude state possess the double virtue of covering nakedness and keeping out the cold. But after all is said and done people don't wear clothing just because of modesty or climate. Whatever the ultimate ethical judgment may be, the

simple social fact is that clothing is also and largely worn as a means of self-expression, for purposes of distinction, or as a satisfaction of some urgent craving for beauty. "Style" or "fashion" are crude words which attempt to summarize these aspects of clothing but which usually either overshoot the mark or fail to hit it at all. The social history of mankind shows how in all ages clothing has been a symbol of and at the same time a means toward social rank. Carlyle, in *Sartor Resartus*, tried to interpret all modern civilization by a philosophy of clothing. In the old feudal days rank was artificially preserved in part by laws reserving to the favored classes the right to use certain fabrics, trimmings, ornaments and the like. In these more democratic days of the Twentieth Century it is not law but good taste that creates favored classes in matters of dress. And it is also true that standards of taste are constantly rising. The American people at least demand better and better clothing. And as relatively greater prosperity permeates the

whole wage-earning group, the rise of standards is accelerated.

Substance Plus Finish

All this preamble means that not only does the clothes artist build up inherent quality in his materials but he strives to enhance and preserve that quality by superior finish. Consequently he tries to improve upon even the most careful work of shrinking and pressing. The process of "finishing" cloth at the mills includes what is known as cutting or cropping or shearing. This is nothing more or less than clipping or shaving the surface of the cloth to trim off surplus pile or fibre after it is shrunk and before it is finally pressed. Formerly done by hand it is now achieved by very delicate machinery which in essence is a sixty-six inch lawnmower with razor blades adjustable to the thousandth of an inch, and driven at high speed.

Just as mill shrinking and sponging is inadequate for the production of fine clothing so also mill shearing is not

accepted as the last word. The fastidious customer wants smartness or clearness of weave and color pattern in this fabric, evenness of pile in another, a fine balance between formality and calculated carelessness in a third. And all these effects can be more or less imparted or controlled by shearing. Most cheviots, soft finished woolens and flannels are only slightly sheared, for in them the natural "kindness" of handle must be preserved, the patterns softened down and a topping effect produced. Clear faced woolens and hard finished worsteds on the other hand require a finish to bring out clearness of weave and color pattern. The finest judgment must be used to attain these qualities without in any way causing the native texture to lose in softness or quality. Most worsteds and serges are sheared at least once in the Kuppenheimer tempering process. Some are run through twice. And as a measure of precaution, fabrics in which the pattern is clear on both face and back are sheared on both sides. This prevents mismatching of

parts in tailoring. The shearing process includes both clipping and automatic brushing to lay the nap preparatory to the final pressing already described.

Tempered Through and Through

This almost meticulous tempering process does not stop with the surface of a suit of clothes or an overcoat. It strikes deeper, into what a designer or tailor would call the very "vitals" of a garment, into canvas, tape, linings and other foundation materials. The secret of reinforced concrete as a successful building material lies in the fact that the steel and the cement are so worked as to expand and contract at about the same temperatures. The result is that they pull together and offer a common resistance to any stress or strain. Just so with tempered clothing: all parts must pull together in fair weather and foul. It would be silly, for example, to shrink woolens and fail to look after canvas or haircloth, which are almost equally sensitive to heat and moisture. Therefore

all these so-called minor elements in clothing are processed. Tape, for example, is very important, for it is stitched around the edges of coats and vests or across fronts as bridles, to hold the cloth in shape and prevent spreading or stretching in seaming and pressing. Therefore it is carefully shrunk by being left in cold water over night. The canvas interlining for coat fronts is given a slightly chemicalized bath and hot roll pressed to shrink it, remove undue amounts of sizing, and give it flexibility. In this process it loses on the average from 2½ to 4 inches in length and 1 inch in width per yard. Haircloth passes through the ordinary cold water and hot-air-dry process common to mohairs and worsteds, incidentally losing 3 to 5 inches per yard of length. Wigans are similarly shrunk, particularly for use on mohairs, palm beaches and other "air o'weave" types of summer clothing, where it takes the place of canvas fronts; mohair interlinings likewise, in order to secure to young men's suits greater flexibility than canvas ordinarily gives.

This then is the story in brief of how "just cloth" becomes the "tempered cloth" used by The House of Kuppenheimer. Some people might be inclined to dub such extreme carefulness "fussiness," just as they frequently call the genius a crank. Fussiness or crankiness if you please—but the real words are *integrity, artistic conscience, insurance.*

Does it pay? Well, does conscience or integrity or professional skill ever pay? The long range experience of this house has proved beyond question that they do pay: pay in confidence, pay in good will, pay in prosperity. Carefulness is always costly, but nothing but the best pays a manufacturer when he is producing not mere merchandise but quality goods. A reputation which has stood the test of around half a century of the keenest competitive conditions could only have been based upon demonstrated integrity—quality of service.

This is no Roycrofter sort of preachment, but a simple demonstration of how

quality, *real* quality that endures, quality all the way through, is achieved. It is no mystery story but simply the plain tale of how genius takes infinite pains. Some fine day its sequel will tell the story of how the genius of designers and tailor-artists in the Kuppenheimer shops has built up the finished clothing which has given the name *Kuppenheimer* in the world of men's clothing the same ring of a true standard which *Sterling* evokes in the world of silver.

—an investment
in good appearance