Maikäfer, flieg!

May bug, fly!

20 prickings by Ulrike Löhr

Translated into English by Sally C. Barry

Page 3:

May bug, fly.
Your father is at war,
Your mother is in Pomerania,
Pomerania is all aflame,
May bug, fly!

from: *Des Knaben Wunderhorn*
Collected by L. Achim von Arnim
and Clemens Brentano 1806/1808

Printing: Druckwerk, Dortmund

Page 4:

20 Insects – designs, text, diagrams and photographs: Ulrike Löhr

May bug, fly! The song had already been created somewhere around 1800, out of fear of the Napoleonic campaigns of conquest in Hesse. Today, it is not only the may bug which has to fight first and foremost against toxic sprays. For that reason, I wanted to turn toward all of the small crawling bugs which make many people squeamish and which we do not often like to tolerate in our environment. I have written a few lines about each bug, in the hope that even you might marvel from time to time at what a miracle of nature these small pests are.

If you own my booklet, *Schmetterlinge*, it is certainly helpful if you have already made one of them. The first three insects in this book are provided with a step-by-step explanation. At the outside edges of the pages, you will find the number of pairs after you have done each step, so you can check your work. For example: 8 (10) = 8 pairs being worked + 10 pairs set aside = 18 pairs on the pillow. The other 17 bugs are explained in various degrees of detail and your imagination is required! All prickings can naturally be managed just as well with traditional Honiton or Withof Duchesse techniques, and a general part at the end of the booklet will help you over the worst of the difficulties.

I am firmly convinced that the technical level of bobbin lacemaking in Europe is constantly increasing and that many lacemakers consider a difficult pricking to be a challenge. Those who feel these prickings to be too much for them might perhaps enjoy the photographs and the stories.

Yours, *Ulrike Löhr*

Symbols:

KR	C	cross
DR	T	twist
HS	HS	half stitch (CT)
LS	CS	cloth stitch (CTC)
GS	WS	whole stitch (CTCT)
SS	FS	fixing stitch (CTCTC)
VF	VP	Venetian plait
PSS	PS	princess stitch (CTT)
FF	FP	false plait
FR	FR	flat rib
NN4		pin-after-4, footside pin

Thread: DMC – Broder Machine No. 50

Open circle – helping pin. It is best to use pins with glass heads so you do not forget to pull them out again.
Hatched circle – existing pin
Solid circle – pin placed in this step of the work

Actions to be done at this step of the work are drawn with a heavy line, previous steps are drawn with a light line.

Page 5:

Aromia moschata

The musk beetle keeps the promise of its name: it gives off a musk-like odor. Some of its local relatives are serious pests of timber. The tropical relatives of the long-horned beetles can have antennae up to 22 cm (8 ¾ ") long.

Page 6:

A	Begin with a plait.	2
B	Transition to a princess stitch, CTT.	2
C	Widening at the individual sections.	2
D	Transition to a tally.	2
E	Widen the tally.	2
F	Set the pairs aside here and make the 2nd antenna correspondingly.	2 (2)
G	Begin with 2 false picots, crescent-shaped tallies with picots.	4 (4)
H	Hang in 2 pairs as a pin-after-4 on each side, continue according to the diagram.	8 (4)
J	Hang in 2 pairs on each side with helping pins, cloth stitch, pin-after-4 on the edge.	16

Page 8:

K	Form the segment (see p. 48) and continue with half stitch.	16
L	Here, a pattern is formed by 4-pair connections of the passive pairs. Take 3 bobbins in the center, instead of 2, because of the odd number of pairs.	16
M	In the middle of one, hang 2×2 pairs over the pins at the edge, continue to work the sides separately.	13 (8)
N	Work 2 rows in cloth stitch. As of the 3rd row, work from the left as follows: 2 cloth stitches, cross, twist only the worker pair (that is in this case, the right pair), cloth stitch, pin-after-4. Keep repeating this for 3 rows, then also only cross the 4th passive pair from the right, twist the worker pair.	13 (8)
O	Again transition to cloth stitch and end as diagrammed, laying out 4 pairs and tying them in a bundle behind the cloth stitch.	(8) (9)

P Work the other side correspondingly, making sewings into the bar! 12 (9)
Q Hang in 1 pair for the pin-after-4, 13 (9)
end correspondingly, as described in O. (9) (9)
R Connect the 2 sides with a cloth stitch 18
and transition into a roll, taking it upward along both sides of the body and using both bars of the pinhole at the pointed corners. 3 (6) (9)
S Set 2 pairs aside for each leg while working. 3 (6) (9)
T Tie off the last 3 pairs behind the neck. These pairs can be fastened to the twisted pair lying across the neck. (6) (9)
Work the 2nd roll correspondingly. (12)
U Begin the legs with a tally. 2 (10)
V Make a twisted picot on the foreleg. 2 (10)
W Princess stitch, place pins to keep in shape. 2 (10)
X Tie off with a bundle. 10
Work the other leg correspondingly. 0

Page 10:
Pricking

Page 12:

Curculio nucum

In 6 to 8 hours of work, the female of the hazelnut weevil bores into a still-unripe hazelnut, in order to lay an egg in it and close up the hole again so that the egg does not fall out. The hole we see in the empty nut was bored by the larva, which falls to the ground after leaving the nut, and pupates there.

A Begin with an antenna. 2
B Hang one pair over the pins for the short hair and tie a knot inside the connection. 3
C Lay this extra pair inside the tally. 3
D After the last tally, divide the pairs as shown and finally transition to a Venetian plait. 3
E Work the 2nd antenna correspondingly. 3 (3)

Page 13:
F For the proboscis:
Hang 9 pairs over a helping thread,
and 1 pair over a helping pin (*a1*). 10 (6)
G Cloth stitch from left to right, put a helping pin at *b1*, twist the worker pair once, then lay it to the left over helping pin *a2*, tension well. Remove *a1* and *b1* after the next row. Keep repeating step G, not forgetting to remove helping pins *a* and *b*. 10 (6)
H One pair from each antenna is added to the cloth stitch, the other two are laid in. 16
J Set aside these 4 inlaid pairs to the right and the left for the eyes. 12 (4)
K Make the eyes in princess stitch. 4 (12)
L Begin with cloth stitch, whole stitch on the left and right, extra twist, pin-after-4. 16
M Twist all passive pairs once. 16
N Now keep repeating half stitch, whole stitch, alternately, sponge ground, no. 7, p. 49/50, but always work the pairs marked * in whole stitch. Do not forget the extra twist at the edge. That is:
* whole stitch, half stitch (6×), whole stitch, twist the worker, whole stitch, give both an extra twist, pin-after-4, exchange the worker. 2 whole stitches, half stitch, whole stitch, half stitch, 3 whole stitches, half stitch, whole stitch, half stitch, 2 whole stitches, give the worker an extra twist, whole stitch, give both an extra twist, pin-after-4, exchange the worker. * 16
Keep repeating from * to *.

Page 14:
O If you have the courage, you can reinforce the central rib with two additional pairs. That naturally changes the system from N, since there are 2 fewer passive pairs. 16
P End: (*) = 6-pair connection, 1 half stitch in the middle after that. 6 (10)
Hang the number of pairs indicated with the arrows on the bars. 30
Begin with the right wing cover:
O = cloth stitch
X = cross, twist the worker
\+ = half stitch 15 (15)
Q At the end, transition to cloth stitch and set aside the 3 passive pairs marked with *. The right 6 pairs work a roll with 6 pairs upward, keep setting 3 pairs aside for each leg. 6 (21)

<diagram> O central whole stitch pair
worker

Page 15:
R Make the lower leg. (See the diagram on the next page.) 3 (21)
S For the middle leg, start with S because of the sharp curvature, and continue with R3. 21
T Work the 2nd wing cover and left legs correspondingly. (12)
U Take the remaining 6 pairs from the right and the left around the abdomen in plaits, which are connected to each other by sewings, 12
V take each in a roll upward (along the middle), 12
W then take all of them together downward again in a Panama cloth stitch <that is, using each group of passives as a single thread>, sewing in the worker on the left and right. Once at the bottom, only the worker is tied off; all the other threads are cut off as fringe at the correct length. 0
X Hang in 3 pairs for the upper left leg, finish like R4. 3
Make the other leg correspondingly. 0
Y Cut off the helping thread from the proboscis and pull it out. 0

Page 16:
Pricking

Page 17:

Tipula oleracea

The common crane fly has pre-formed breaks on its long legs. That makes it difficult to catch one without damaging it. Leaving limbs behind is often the last escape from certain death, since the crane fly has many enemies and its larva has even more. The losses can only be counterbalanced by a high breeding rate. There are over 1300 eggs. The crane fly is a dipteran (two-winged insect), where the back wings have turned into a hypopygium - a kind of flight control stick, which contains important sensory organs. When the bug flies unsteadily over the meadows, it is easy to doubt that it was such a happy accident of Mother Nature.

Page 18:

A Begin with 2×4 pairs, pin-after-4. 8

B Form a segment (see p. 48), putting the bobbin through twice. 8

C Make all segments of the tail as described, 6 in all. 8

D After the first 2 pins of the body, change to half stitch, work normal eternelle, continue making whole stitch, pin-after-4 on the outside. 8

E Make the hypopygium: half stitch with the edge pair, twist often and make a twisted picot, work back with a false plait, whole stitch with the edge pair, extra twist. 2 (6)

F After 7 pins have been worked on each side of the body, change back to the pattern from C. Form the segment for the head. 8

G Work the head, make a sewing at each of the places marked with an arrow, then make a plait on each side with 2 pairs and a plait in the center with 4 pairs. 8

H Combine all pairs into princess stitch. 8

I To end, combine each 2 pairs into a plait. Decorate the outside antennae with simple (knotted) picots and tie off each pair with a square knot (reef knot). Tie off the inner plaits with a bundle. 0

J Hang in 8 pairs on the bar and begin with a flat rib from the inside. 8

K At the *, begin to turn (see *Butterflies* A7). 8

Page 20:

L The ground consists of half stitch and whole stitch.
O = half stitch, + = whole stitch 8

M End the area and begin the plaits. 8

N Hang in 2 additional pairs. 10

O Bring the plaits together. 10

P Now consider each pair to be a thread (in principle like in O). Secure the last 2 pairs with square knots, tie off 2 pairs at each bar and make a bundle in the direction of the arrow. 0
Work the 2nd wing correspondingly.

Q Pin on 2 pairs and twist each twice (= 4 twists around the pin). 2
Begin with princess stitch (CTT), later transition to a tally. Bring the legs into shape with very fine pins (insect pins are very helpful here). To end, tie in the right and left bar of a hole and then make a bundle on the leg. 0
Work the other 5 legs according to the bends.

Page 24:

Ephialtes manifestator

The ichneumon wasp is very useful for agriculture. There is no way to tell to what extent pests would multiply if they did not exist. Since the ovipositor is very thin, the shape of the egg is adapted to it and can reach up to 2 cm (¾ ") in length. The egg is laid in caterpillars, or the like, in the ground. The larva eats the host from the inside, eating the organs important for life last. The longest borer (ovipositor) of this family is that of a South American species, which is 10 cm (4 "), compared with a body length of 2 cm (¾ "). While the larvae live parasitically, the imagoes (adult insects) lick honeydew and plant sap.

<diagram> D

→ 3 CS cross, twist the worker 3 CS
← 3 CS cross, twist the worker 3 CS

Cross, twist the worker means: only twist "in the traveling direction", that is for example, in rows from left to right, the right pair.

Page 26:

Detailed photograph of the middle of the body, the working side, thus the back of the lace.

Page 27:

Zoniopoda omnicolor

This grasshopper from South America produces a noise in flight. The mechanism for creating the noise is as complicated as its name: Tegmino-Alar-Stridulations mechanism. Very much simplified: rubbing the veins of the wing during flight creates the noise, while other grasshoppers and crickets produce their song while sitting because they need their wings and legs to do it. The grasshoppers are wonderfully colored in blue and yellow.

Page 28:

<diagram> Claws
Hind leg
Pricking
Lower wing:
Begin the point ground irregularly!
Remove this helping pin!
Beginning of the rib
Rib
Forewing:
from left to right: 2 CS, cross, twist the worker
from right to left: 2 CS, 1 HS

Page 29:

Mantis religiosa

The praying mantis is one of the most widely distributed of the mantises. It is not very choosy about its food. It actually consumes all moving bugs that it can overwhelm and it is well known that its appetite is so large that it even consumes the male after mating.

Page 30:

<diagram> A forewing
sew into the bar

<diagram> B grasping leg

<diagram> C leg

Page 31:

Anax imperator

The emperor dragonfly, with a wingspan of 9.5 – 11 cm (3 ¾ " – 4 ⅜ "), is one of the best fliers among the dragonflies and insects. There is no aerobatic feat, from loops to perfect glides, which they have not superbly mastered. However, since they can even acquire and eat their food, as well as often mate and lay eggs while flying, they have also developed high-performance compound eyes, which consist of 10,000 to 30,000 individual eyes. With that, they are also among the insects with the best sight. There were already similar dragonflies in the carboniferous period, some of which had a wingspan of 70 cm (27 ½ ")!

Page 32:

<diagram> B   fixing stitch here
    fixing stitch here

Page 33:

Pricking

<diagram> flat rib

<diagram> Order of working, with letters and the number of pairs.

Spathius claratus

The braconid is a parasitoid, that is, it kills its host and is thus very useful. How does the female braconid find the right host for her egg? A tiny brain leads her to it and preserves a behavior which has been proven for hundreds of thousands, or even millions of years. Many ichneumons, which are parasites of the long-horned beetles, emit a trill or tap on the trunks of dead or dying trees to find a host for egg laying, before boring their ovipositor deep into the wood, certain of their goal, and laying the egg in the host. Others have infrared detectors in their antennae and thus sense slight increases in temperature which come from hosts hidden under the surface. At the same time, they recognize and avoid regions already searched by insects of their species. The egg develops into a larva in the host.

Page 34:

Exaerete smaragdina

The scientific name of this large orchid bee betrays what the photograph cannot show: the up to 2.5 cm (1 ") long bee shimmers in metallic green and blue. <Smaragd means emerald in German.> In South America, the fight for existence is not so hard; the climatic conditions are optimal for insects, there is plenty of food, they can afford a bit of luxury and thus dress themselves colorfully and conspicuously. The native Indians also make use of it; they use the artistically polished thorax of the bee for jewelry. The proboscis looks dangerous, but it is only an excessively lengthened lower lip, which together with the mandible, produces a kind of tube. Through sucking motions of the mouth, the nectar is, so to speak, pumped upward.

Page 35:

Lucanus cervus

The stag beetle needs 5 years in general until its larva has reached the size of 10 cm (4 ") and pupates. Due to different food and climatic conditions, the size of the beetle can vary between 3 and 10 cm (1 ⅛ " – 4 ") and even the “antlers” (mandibles) can be almost entirely missing. So that the royal fellow can keep its balance, the antlers are filled with air sacs. The enormous pincers can indeed no longer be used as a tool for eating; the beetle licks the sap which flows out of trees with its brush-like lower lip. If it finds a female which already has one or several suitors, there can be dangerous battles between the rivals, where it can occasionally cost a piece of leg or antler. In the meantime, the female waits off to the side. Apart from that, stag beetles have other human characteristics: when they drink too much fermented tree sap, they begin to stagger.

Page 36:

<diagram> A claw (antler)
    projection: + = half stitch
        + = whole stitch
    picot

<diagram> B back
    Taking pairs away

<diagram> C leg (generalized diagram)
    The worker should make the picot. This can be achieved by only twisting once before making it.

Page 37:

<diagram> A outside edge

Nemoptera sinuata

The spoonwing lacewing, native to southern Europe, belongs to the order of the Neuroptera, along with the antlion, green lacewing and snakefly. The larvae, and sometimes the adults, are all voracious predators and are therefore quite useful, since they destroy the pests on our useful plants. In the families mentioned, the number of eggs laid (between 50 and 8000), as well as the time required for the larvae to develop, can vary quite a lot. At our latitude, many brown lacewings need only 2 weeks until pupation, while on the other hand for some antlions and owlflies, the larva stage can take nearly 3 years.

But the Neuroptera also have many enemies. They mainly fall prey to birds, bats, spiders, every possible predatory insect, and even to others of their own species.

Page 38:

Melolontha melolontha

The may bug (cockchafer) belongs to the family of the Scarabaeidae. Seals in the form of a scarab were considered to bring luck in ancient Egypt, since the beetle was sacred there. Formerly a great plague for agriculture, the beetle has become more rare today, and I find it regrettable that I had to be 32 years old before I saw the first one alive.

<diagram> Photograph, see title page

<u>Principle of the back, on the "right"</u>
paddepootje
princess stitch
4-pair connection
tension carefully!

<u>Principle of the wing, on the "right"</u>
* = take 2 pairs each time from the ribs of the wing in princess stitch
Ground 7, p. 49/50

Page 39:
<diagram> Head
principle of the antenna

Page 40:

Acherontia atropos

The death's-head hawk moth comes over the Alps to northern Europe from Africa (Ethiopian region) every year in varying numbers, and it even flies as far as Iceland in favorable years. The moth flies about 50 km/hr (31 mph) with a wingspan of 12 cm (4 ¾ "), and it crosses the Mediterranean not only at the narrow places, such as Sicily or Gibraltar, but along a wide front. The moth flies home again, and it may be the same ones which return the next year, but "banding" them would be difficult, since they are only active at night. Moths hatched here after warmer summers and winters are not capable of reproduction.

The death's-head hawk moth goes into beehives to steal honey (though it does not always survive), and it produces a sound reminiscent of a mouse's squeak when in danger.

<diagram> Eye of the death's-head
Start here with a helping pin and magic thread
See diagram above right
Transition to the abdomen
28 pairs in total

Page 41:

Liparus glabirostris

This is our largest snout beetle, "a clumsy, black animal, more than 2 cm (¾ ") in length, which sluggishly crawls along under the leaves of the butterbur on the banks of mountain streams." (Quotation from a textbook.)

The snout beetle (or "true" weevil) is the family in the animal kingdom which has the most species. More than 40,000 to 50,000 species are known today, and hundreds more are added yearly. This wealth of forms is partially because they are such plant specialists.

Page 42:
<diagram> See Curculio
Ground 6a Ground 6b

Page 43:

Ephemera vulgata

The brown mayfly can be observed now and then in large swarms during their nuptial flight near slow-moving streams. During their lives as adult insects, which may last only a few hours, they can throw off their own legs under certain stimuli, due to the great number of their enemies. Young bugs even have the ability to regenerate torn-off body parts (legs, antennae, etc.). The nymphs can survive the loss of even 5 legs. The larvae, which often need many years to develop, serve as an indicator for the degree of pollution of bodies of water, by the prevalence of their distribution.

Page 44:
<diagram> Head:
Antenna, 2 pairs in princess stitch
+ 2 pairs for eyes with plaits
start with pattern 11, p. 49/50

Celerio euphorbiae

The spurge hawk moth lays its eggs in the ground, where they can remain for several years before the caterpillars hatch.

Linnaeus used the name Sphingidae, which had already been coined before him, for the family of the hawk moths (sphinx moths, hornworms) in his *Systema Naturae* in 1758, because the erect front part of the body of the caterpillar and its markings are reminiscent of a sphinx. As visitors of long-tubed flowers, many species of hawk moths have a very long proboscis; in one South American species, up to 28 cm (11 ").

Page 45:
<diagram> Principle of the ankle

Decticus verrucivorus

The wart-biter can jump very far. It can bite severely if in danger, when a brown juice, which is supposed to remove warts (according to popular tradition), comes out of its mouth .

It is well known that grasshoppers are among the insects which are masters at making music. The notes are produced by rubbing the legs and the wings. They also have good hearing, since the song serves to attract the female, who even reacts to it from 40 m (131 ') away. The upper limit of hearing is far above the ultra-sound area. The wart-biter can certainly perceive a sound with a frequency of 90,000 Hz, which we would not be able to hear. For notes under 100 Hz, there is an auditory organ on the knee of the foreleg.

When a female approaches curiously because of the song, the male tries to catch her with its hind leg.

Page 46:

Flying Butterflies

From caterpillar to butterfly.

Hardly any transformation in nature is so fundamental and grandiose as this. The caterpillar, sometimes harmful and almost always unpopular, and then the butterfly, fluttering over the meadow. There is scarcely any image that conveys to us the carefree joy for life more beautifully.

But the fluttering flight has the purpose of escaping the enemy. The proboscis of the butterfly is a perfect suction tube. Many species have sense organs which can perceive tastes in their thin legs, and the large antennae have sensitive olfactory organs, with which the female is supposed to be able to smell the pheromones of the male over 12 km (7 ½ mi.) away.

<diagram> Wing ground, choose one from p. 49/50

Page 47:

<diagram> Butterfly 1

Begin from antenna, head and body
Rib on the lower wing
Example of a crossing of princess stitch
and working in 2 new pairs
Hang over 2×1 pairs each side

<diagram> Butterfly 3

In this way, the butterfly can be worked
almost entirely with continuous threads.
To end the legs on the outside:
Leg
a) Begin the antennae with princess stitch
Picots as eyes
b) Body with (leaf) tally
c) Lay back individual threads and reduce to 2 pairs
d) Work back with plaits, tie with the individual threads
+ 4 new pairs = 8 pairs
=> flat rib (no. 5)
Hole for the wing: Work a fixing stitch at all places marked with X: CTCTC

Page 48:

General Technique

Tying off

Body: Take the bundle toward the antennae!

Wing: Always tie off the bundle away from the body!

I always pull the whole thread through, that is, cut off the bobbin, pull the thread completely through with the hook and tie it with the other thread of the pair. That looks flatter and nicer than first making a sewing and then tying a knot.

Always twist 2-3 times before pin-after-4

At half stitch, pin-after-4, always work an interior whole stitch, but do not forget the extra twist before the pin-after-4!

Sewings

Always make a sewing into the bar, usually the lower bar (see 8.4.6, *Tricks und Kniffe*).

Making a flat rib

Without twist 1 twist 2 twists fixing stitch, twist

Optimal pinholes look

like this not like this (a) or like this (b)

See To correct the problem, p. 49.

Forming segments

Page 49:

To correct the problem

in case a)
- worker pair on the side without pins: instead of no twists, twist once
- worker pair on the side without pins: instead of 1 twist, twist twice
- do not tension the worker pair so much! toward the top
- perhaps use more passive pairs or thicker thread.

in case b)
- tension better!
- fewer twists on the side without pins
- perhaps use fewer passive pairs or finer thread.

Making a roll

Grounds

Page 50:

1

CS
CT, twist passive pair
C repeat
CS
CS
CT, twist passive pair
C repeat
CS

This ground is very difficult to tension, but it has a very natural appearance because of its irregularity. If possible, do not make it in linen, as it breaks too quickly here.

2

→ CS
CS 1^{st} + 2^{nd} pair
CS 3^{rd} + 4^{th} pair, etc.

← CS
CS 2^{nd} + 3^{rd} pair
CS 4^{th} + 5^{th} pair, etc.
helping pins

3

→ HS
C, T worker pair

← HS
C, T worker pair

Instead of half stitch, cloth stitch is also possible.

4

→ CS
C 2nd + 3rd threads
C 4th + 5th threads, etc.

← CS
T 1st pair
T 3rd pair, etc.

→ CS
C 2nd + 3rd threads
C 4th + 5th threads, etc.

← CS
T 2nd pair
T 4th pair, etc.

5

→ CS
FS

← FS
CS

Always tension after the fixing stitch

6a + 6b

→ CS
TC

← CS

→ CS

← CS
TC

7

→ HS
WS

← HS
WS

8a + 8b

→ CS
C, T worker pair

← CS

→ CS

← CS
C, T worker pair

9

→ <u>CS</u>
HS
CS
<u>CS</u>
repeat

← <u>CS</u>
HS
CS
<u>CS</u>
repeat

10

→ CS
T all pairs

← CS
C 2nd + 3rd threads
C 4th + 5th threads, etc.
helping pins

11

→ HS
C, T worker pair

← HS

→ C, T worker pair
HS

← HS

<u>In General</u>

- Each box drawn with a thin line shows the working procedure between the worker pair and <u>one</u> passive pair.
- The arrows show the working direction.
- The grounds can be used on the same pricking as half stitch, cloth stitch, whole stitch.

<u>Notes on the translation:</u>

This booklet has been translated with the kind permission of the author. This translation may be reproduced, but it ***may not be offered for sale***.

In this translation, half stitch is CT, cloth stitch is CTC and whole stitch is CTCT.

As the translator is not an entomologist, your pardon is requested for any errors or omissions regarding the insects.