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LOVE AND LIFE.

(From the picture by G. F. Watts.)

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SEX-LORE

A PRIMER ON COURTSHIP, MARRIAGE, AND PARENTHOOD

BY

MRS. S. HERBERT

WITH A FRONTISPIECE
AND FIFTY-FOUR OTHER ILLUSTRATIONS

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To

THE YOUNGER GENERATION

PREFACE

I HAVE long felt that in spite of the many books published which deal with Sex, there is none that can be given to young people with complete confidence. They are either too learned; or, if they avoid technicalities, they are too barren of real information. I have tried to escape both these pitfalls. The material of the book is based on the works of well-known authorities, of which a list is given at the end of the book.

I cannot but make special mention of the influence and stimulation of my husband's work, without which this book would not have been written.

F. H.

MANCHESTER,
March, 1918.

CONTENTS

PAGE

INTRODUCTION - - - - - 1

PART I.—COURTSHIP

CHAPTER

I. Courtship among Animals - - - - 7

1. Invertebrates - - - - - 9

2. Vertebrates - - - - - 14

II. Courtship in Man - - - - - 27

1. Puberty - - - - - - 28

2. Means of Courtship - - - - 34

3. Methods of Courtship - - - - 38

4. Modesty - - - - - - 48

PART II.—MATING AND MARRIAGE

I. Mating - - - - - - - 56

1. Biological Facts - - - - - 57

2. Physiological Facts - - - - 62

II. Marriage - - - - - - 65

1. Matriarchate - - - - - 66

2. Patriarchate - - - - - 68

Marriage Ways - - - - 73

3. Monogamy - - - - - 81

Marriage Rites - - - - 82

PART III.—PARENTHOOD

CHAPTER		PAGE
I.	Reproduction	90
	1. In Animals	90
	2. In Man	98
II.	Parent and Offspring	111
	1. Parental Care in Animals	111
	2. Parental Care in Man	132
	Index	145

LIST OF ILLUSTRATIONS

Love and Life, by G. F. Watts - - *Frontispiece*

FIG.		PAGE
1.	Beetle - - - - - - -	5
2.	Fish - - - - - - -	5
3.	Triton - - - - - - -	7
4.	Gold and Silver Birds of Paradise - -	*facing* 8
5.	Fiddler Crabs - - - - -	,, 9
6.	Scorpions - - - - - -	,, 10
7.	Spiders - - - - - - -	11
8.	Chameleon - - - - - - -	14
9.	The Argus Pheasant - - - - -	16
10.	The Ruff Bird - - - - - -	18
11.	Bell Bird - - - - - - -	19
12.	Birds of Paradise - - - -	*facing* 20
13.	Bower Birds - - - - -	,, 21
14.	Horned Animals - - - - -	23
15.	Roaring Stag - - - - -	*facing* 24
16.	Monkeys - - - - - -	25
17.	Initiation Costume - - - -	*facing* 30
18.	Maturity Costume - - - -	,, 31
19.	Tattooing - - - - - - -	37
20.	Ornamental Scars - - - -	*facing* 38
21.	A Turkish Lady in Outdoor Dress - -	,, 50
22.	Street Costume of Woman of Tunis - -	51
23.	Division of Amœba - - - - -	55
24.	Division of a Marine Worm - - - -	77
25.	Budding of Yeast - - - - -	58

FIG.			PAGE
26.	Budding of a Marine Worm		58
27.	Budding of a Sponge Colony		59
28.	Conjugation of Noctiluca		59
29.	Conjugation of Zanardinia		60
30.	Volvox Minor, with Sex Cells		61
31.	A Norwegian Bride	*facing*	86
32.	Woman of Sumatra in Bridal Dress	,,	87
33.	Ovum, surrounded by Sperm Cells		90
34.	Fertilization in Ascaris Megalocephala		91
35.	Embryogeny of Sagitta		92
36.	Hen's Egg : Diagrammatic Longitudinal Section		94
37.	Metamorphosis of a Butterfly	*facing*	94
38.	Cocoons, Chrysalis, and Moth of Silkworm	,,	95
39.	Stages in the Development of the Frog	,,	95
40.	Three Successive Stages of the Human Embryo		99
41.	Butterfish and Eggs		115
42.	Midwife Toad		117
43.	Emperor Penguin	*facing*	122
44.	Nests of Weaver Birds	,,	123
45.	Brown Pelican feeding Young	,,	124
46.	Young Flamingoes feeding Each Other	,,	124
47.	Wallaby and Young	,,	128
48.	Koala, or Australian Native Bear, and Young	,,	129
49.	American Woolly Opossum with Young	,,	129
50.	Swazie Mother with Child	,,	132
51.	Zulu Woman with Child, threshing Corn	,,	132
52.	Woman of Java, with Boy	,,	133
53.	Woman carrying Cradle and Child		134
54.	Esquimo Woman with Child		135

SEX-LORE

INTRODUCTION

One of our greatest painters, G. F. Watts, has given us a picture entitled "Love and Life," which is reproduced in the frontispiece of this book. It shows the figure of Life, represented as a frail, delicate maiden, guided along her path over precipices by Love, a vigorous youth. She is stumbling wearily up a steep and rugged path, and looks almost too weak and faint to go any further, only that Love helps and encourages her. He shelters her with his wing and leads her gently upwards. His presence gives her confidence, and his strength and sympathy save her from giving way to despair. In this allegory Watts has embodied a fundamental truth: Love really is the central and sustaining force of Life. Not only does love add beauty to life and brighten it, but life itself springs from love, being created by the very act of love.

It is love that draws the youth to the maiden, when childhood has been passed and the first stirrings of the growing age or adolescence are felt. Then is the wonderful time of day-dreams and romantic feelings, when everything assumes a rosy hue. The

world appears beautiful and seems to stretch out and become too large for the awakening soul to hold. It is love that finally unites man and woman in the one great act of creation, which results in the birth of a new being, the precious frail little babe destined to be the future bearer of life, and thus to carry on the unending line of generations. It is love that shields this new life during its fragile and tender early days, until it is strong enough to battle for itself and to thread its way along the rugged path of existence in order to take up the task of life once more—love and courtship thus linking up the never-ending chain.

The following pages, which are to give some account of love in all its phases, will have to deal with Courtship, then with Mating and Marriage, and finally with Parenthood and Childhood.

PART I.—COURTSHIP

"In the spring a young man's fancy lightly turns to thoughts of love." This is not felt by the young man only, nor only by the human race, but by all living beings. In the spring the trees begin to bud, the birds pair, and build their nests, and the animals seek their mates. All Nature awakes to the task of bringing new life into the world. We all have known the spirit of hope and rejoicing which enters into us with the first breath of spring. A joyousness which seems to have no cause or meaning takes possession of us; we frisk about, dance and sing, and hardly know how to give expression to this glorious sensation of life within us. Never does the world seem so delightful as in the spring. How lovely is the song of the birds which greets us from every tree! They are only expressing in their own manner what we all feel.

"A touch of Nature makes the whole world kin." This touch of Nature which makes us kin with all animals is greater than would at first appear, and goes down to the very roots of our being. The most important organs necessary for our welfare and life we have in common with the animals. Although our bodies seem to be so different from theirs, yet

we are like them in possessing similar organs of sight, hearing, touch, taste, and smell, as well as organs of digestion and of reproduction.

For ages it was believed that Man and animals were created separately and that they were entirely different. It was only in the nineteenth century that this idea slowly began to give way to the new discoveries that were made by men of science. Deep below the surface of the earth, in the rocks, were found the remains of animals whose types are now extinct and no longer exist. It was proved that the fossils found were those of the ancestors of similar species now living. In the same way, it has been shown that man's ancestry also can be traced back to an extinct type of being, which was intermediate between man and ape, the so-called ape-man. Indeed, Charles Darwin has established it as a scientific fact that all animals are descended from earlier, simpler forms, and that man also traces his origin back through the ape-man in the last instance to the animals. This principle, the descent of all higher beings from the lower, is called the theory of Evolution.

If we wish, then, to understand ourselves, we shall derive much help from the study of animals. The life of animals is more natural and more simple than that of mankind. They have not our highly complicated social customs, which overlay and often completely hide our natural impulses. It is because of this simplicity that animals display the facts of life in a more primitive and unaffected manner. The same applies to courtship, the subject of this

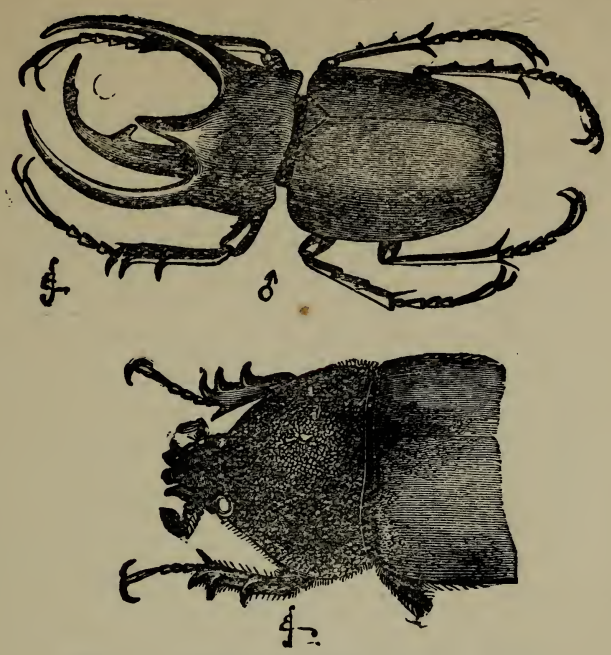


FIG. 1.—BEETLE (*Chalcosoma Atlas*).
Upper figure, male (reduced); lower figure, female (natural size).

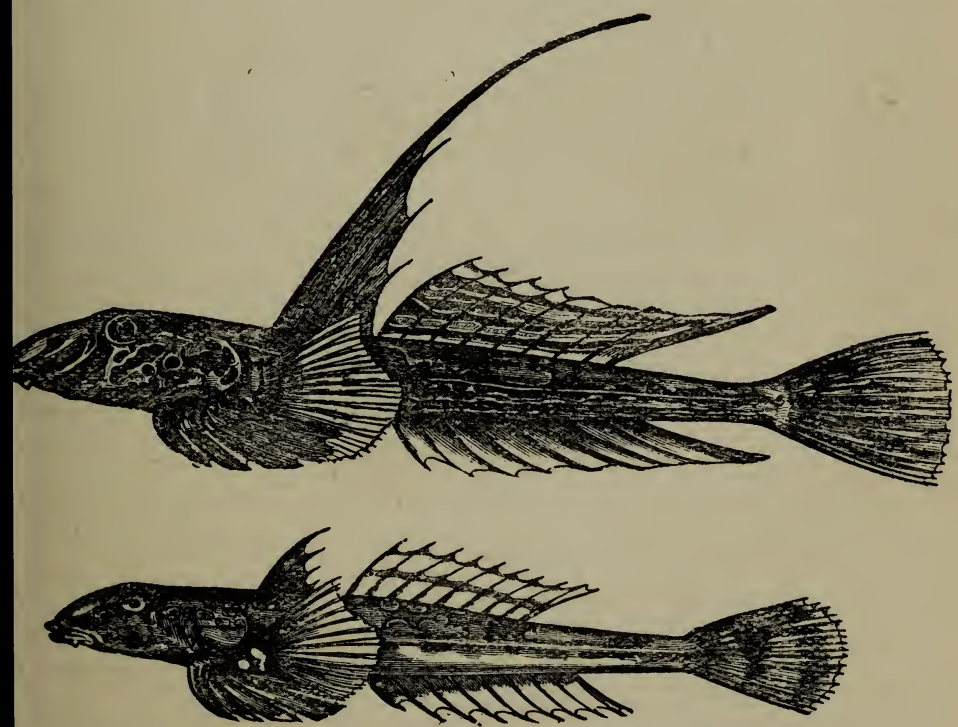


FIG. 2.—FISH (*Callionymus Lyra*).
Upper figure, male; lower figure, female. The lower figure is more reduced than the upper.

(From "The Descent of Man," by C. Darwin.)

chapter. Everybody knows what courtship is; but its origin and meaning are very little understood. In dealing, therefore, with the subject we shall consider first the courtship of animals, and then that of man.

CHAPTER I

COURTSHIP AMONG ANIMALS

If we compare with one another the figures of Love and Life in our frontispiece, we notice a distinct difference in their forms. The maiden, in spite of her slimness, has curved outlines of breast and hips,

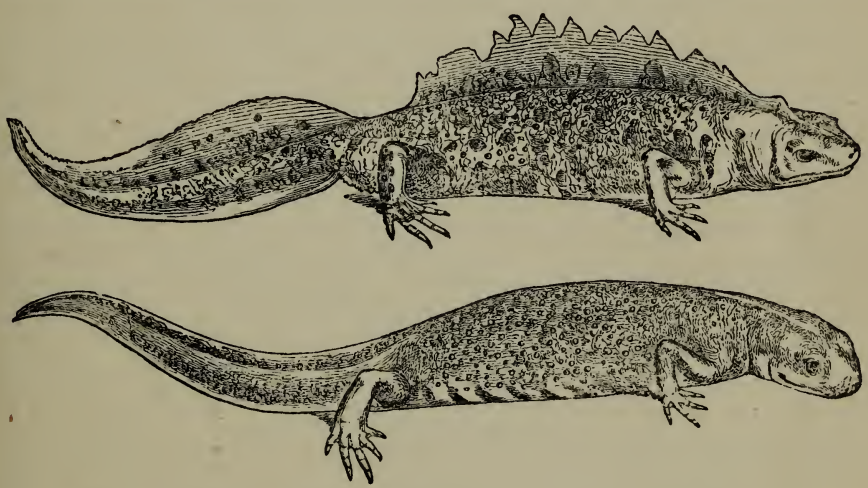


Fig. 3.—Triton (*Triton Cristatus*) (half natural size).
Upper figure, male, during breeding season; lower figure, female.
(From "The Descent of Man," by C. Darwin.)

and sinuous arms. The youth is of larger build, with a broad, muscular, flat chest, strong limbs, and more rugged outlines. These dissimilarities become still greater as the maiden develops to full-grown womanhood and the youth to manhood. Such

traits, peculiar to man and woman respectively, are called sexual characters.

Sexual differences are to be observed everywhere in the animal world. Among the higher animals the male is generally much bigger and stronger than the female, and often possesses more brilliant colouring, or appendages, such as combs, wattles, etc., or weapons, such as antlers, spurs, etc., and other decorations, which do not always appear beautiful to the human eye (see Figs. 1 to 5). Many of these decorations in animals only appear at the mating season, and serve a special purpose during the period of courtship. For at this time some males make a great display of their charms; while others fight among themselves for the possession of the females.

Darwin, and many subsequent writers with him, held that the female chooses the most beautiful or strongest from among the males, the inferior suitors for her favours being left out in the race of life. As the best individuals would thus always be chosen, they would become the parents of the future generations, and would pass on their good qualities to their progeny. Darwin called this process Sexual Selection. There never has been any doubt that the amorous displays and combats, so wonderfully described by Darwin, actually do take place among animals. The theory of Sexual Selection, however, is generally rejected nowadays, a different explanation of these phenomena being given by modern scientists. It has been shown that the female does not really choose the male; nor is she generally even capable of an æsthetic choice. All that happens is, that she, as well as her partner, is strongly aroused

by the prolonged parade of beauty and strength. The most gorgeous or the strongest male, having gained the victory over his less-favoured rivals, is left on the field, and becomes the successful possessor of the object of his desires. Courtship, as thus interpreted, is seen to perform a very useful purpose in life, being a preliminary sex play and a necessary step towards the final act of mating. In considering the various modes of courtship, we shall commence with the lower animals and gradually work up to the higher.

1. Invertebrates.

No real case of courtship has been observed in animals lower than the Crusters, to which the crabs and lobsters belong. Among the crabs there are no great sexual differences between male and female; but in some the right front claw or "hand" of the male differs in structure from the left. This shows itself in an exaggerated form in the Fiddler-Crab (Fig. 5). According to Pycraft, the male here has one hand tremendously enlarged, so that it attains a size twice as great as the body of the crab itself. It serves chiefly as a war club in the fights which the males indulge in for possession of the females. It is of a beautiful cherry-red colour, and is waved about wildly to attract the female when she is near.

We find among the Scorpions the first example of a more elaborate courtship. The scorpion is a near relation of the spider, and has a poisonous sting that is used for offence and defence. There is little difference in size or colouring between the sexes.

The male makes his advances by pressing the claw or "hand" of the female, and also by intertwining his tail with hers. He catches hold of the hand of the female, and the two take a promenade together which often lasts for an hour or more (Fig. 6). After this the male digs a hole near a stone, into which they both retreat. When the courtship is at an end, the male is often devoured by the overexcited female. This fate the unfortunate male scorpion shares with his relative, the male spider, who also frequently falls a victim in the act of courtship.

The female spider is generally larger than the male. Mr. and Mrs. Peckham in their famous study on spiders describe the courtship of spiders as follows (see Fig. 7): "A male spider was placed in a box containing a mature female. He saw her as she stood twelve inches away; the glance seemed to excite him and he moved towards her. When some four inches from her he stood still, and then began the most remarkable performance that an amorous male could offer to an admiring female. She eyed him eagerly, changing her position from time to time so that he might be always in view. He, raising his whole body on one side by straightening out the legs, and lowering it on the other by folding the first two pairs of legs up and under, leans so far over as to be in danger of losing his balance, which he only maintains by sidling rapidly towards the lowered side. . . . . He moved in a semicircle for about two inches, and then instantly reversed the position of the legs and circled in the opposite direction, gradually approaching nearer and nearer to the female. Now she dashes towards him, while he, raising his first pair of legs,

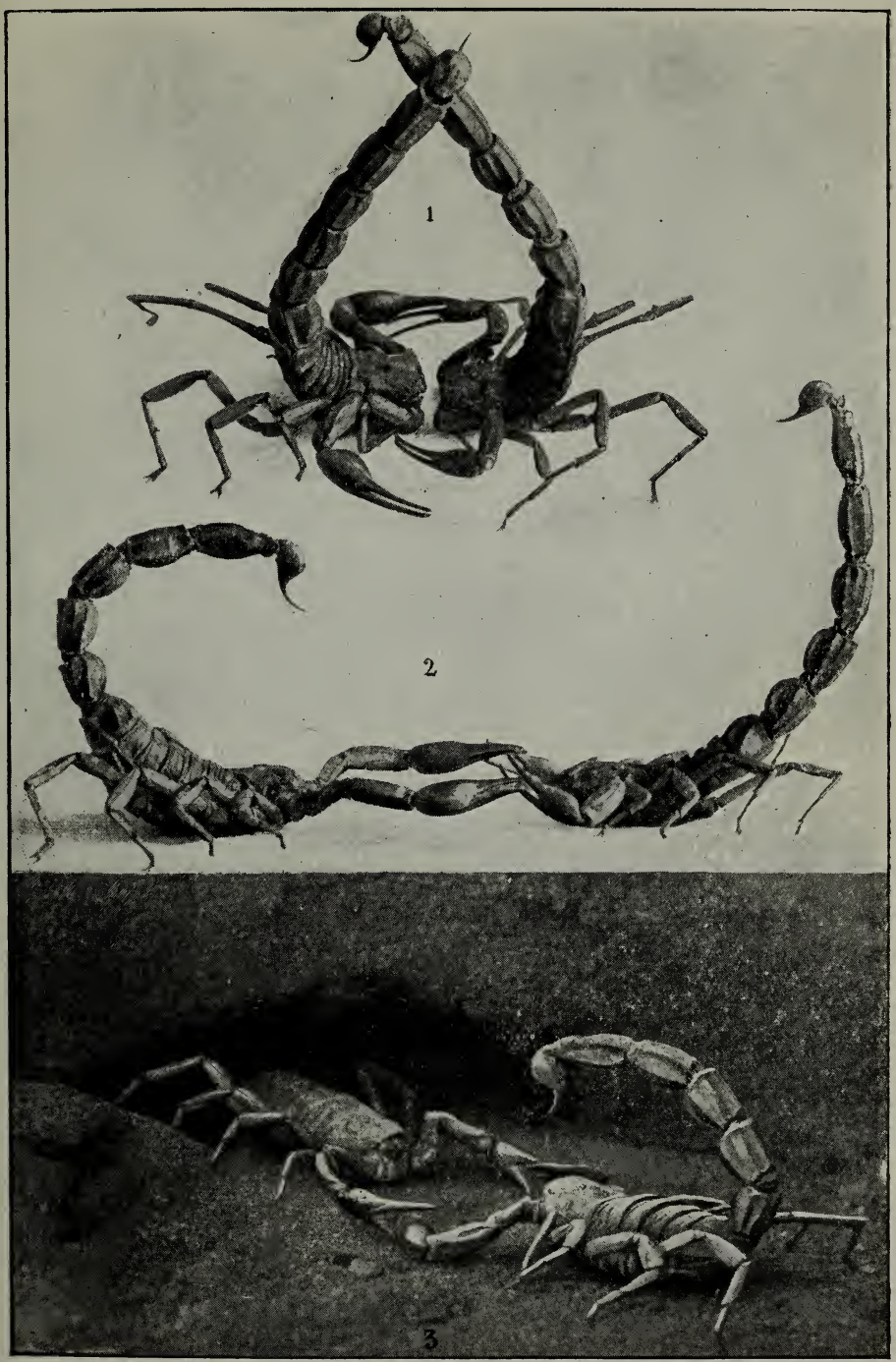


FIG. 6.—SCORPIONS.

1, Nuptial allurements; 2, the wedding stroll; 3, the couple enter the nuptial dwelling.

(From "Life and Love of the Insect," by J. H. Fabre.)

extends them upwards and forwards as if to hold her off, but withal slowly retreats. Again and again

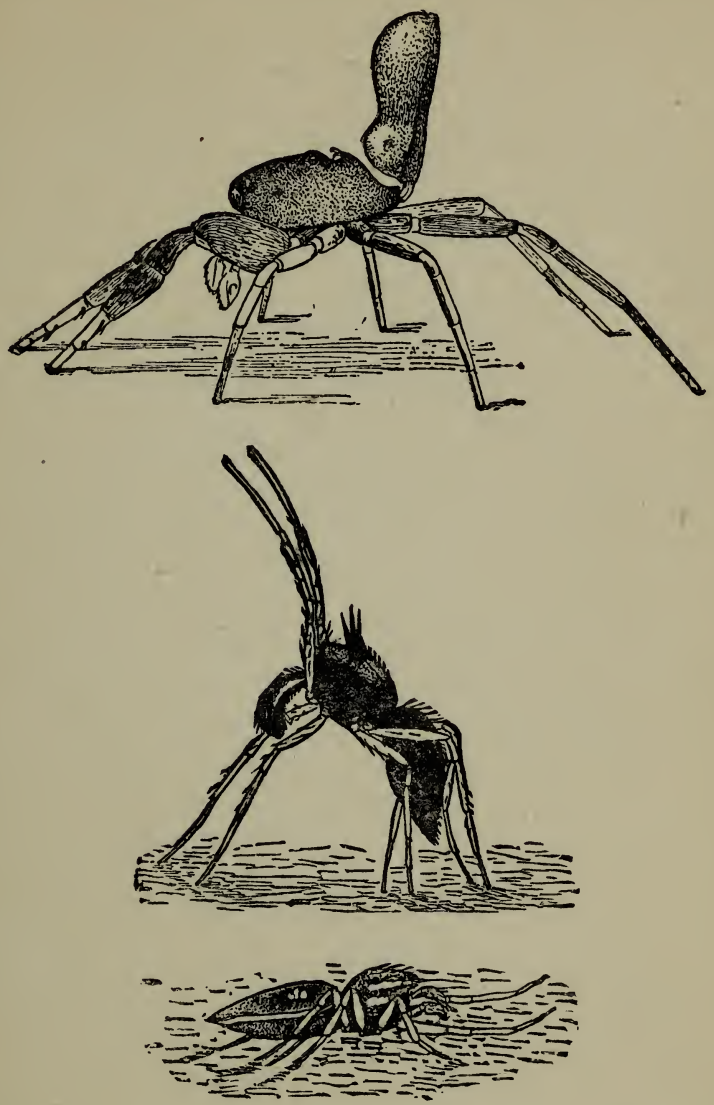


FIG. 7.—SPIDERS (IN COURTSHIP ATTITUDE).

(From "Darwin and after Darwin," by G. J. Romanes. By permission of Messrs. Longmans, Green and Co.)

he circles from side to side, she gazing towards him in a softer mood, evidently admiring the grace of

his antics. This is repeated until we have counted one hundred and eleven circles made by the ardent little male. Now he approaches nearer and nearer, and when almost within reach wheels madly around and around her, she joining and wheeling with him in a giddy maze. Again he falls back and resumes his semicircular motions, with his body tilted over; she all excitement lowers her head and raises her body so that it is almost vertical. Both draw nearer; she moves slowly under him, he crawling over her head, and the mating is accomplished. The female always watches the antics of the male intently, but often refuses him in the end, even after dancing before her for a long time." And then it often happens that in a fit of violent excitement she devours him !

It is among the insects that we find a new factor introduced for the first time into the drama of courtship—namely, music. It is true, it may be only a rasping noise made by the wings and legs of certain insects, such as grasshoppers and crickets; but it seems to have charms enough to soothe the breast of the female. It is the male who generally produces this music to allure the female. There is one species of crickets called Cicadas, the males of which make a loud noise that can be heard a long way off. In some cases it has been heard a mile away. The silence of the females seems to have impressed a Greek poet very much; for he took occasion to remark: "Happy the Cicadas' lives, for they have voiceless wives." This saying gives us a clue to the poet's opinion of women. But are there no garrulous men ? One kind of grasshopper in America seem to be particularly emphatic in their love-call; for they are

constantly asserting that "Katy-did, oh-she-did, Katy-did!" These are called katydids. What she did, is a secret they keep to themselves. The female only replies by a sharp chirp made by an upward jerk of the wings. Does she confirm the fact that "Katy did" or does she deny it?

The most beautiful of all the insects are the butterflies and moths. Their colourings and markings are exquisite and extensively varied. The delicacy of their wings is remarkable. When butterflies flutter about in the sunlight, they show off their gorgeousness to the best advantage. Darwin thought that this beauty is due to Sexual Selection—that is, that the finest specimens of the males are chosen for mating. But it is doubted now whether female butterflies notice or are, in any case, able to appreciate the bright colourings and intricate markings of the males, and this would be necessary for a choice to be made. In many cases the female, too, may be brilliantly coloured and yet be completely different from the male. It has been discovered that the males of butterflies exhale a delicate perfume, which makes the females aware of their presence, sometimes from a long distance. In the moths, however, the female is often wingless and is consequently unable to move about; here it is she that exhales the odour to attract the male. Experiments have been made by a naturalist, who took off the wings of some female butterflies and placed them on the male. He also dyed some in various colours, but found that these changes made no difference in the choice of the females, thus proving that it is not colour which is the source of attraction.

2. Vertebrates.

We have all heard of the famous "frog who would a-wooing go." This must have happened in the early spring, for that is the pairing time of the frogs. We are not told in the poem with what sort of music he serenaded his fair lady. The musical talent is possessed as a rule by the male frog only, and exerts a great attraction on the female. The common frog

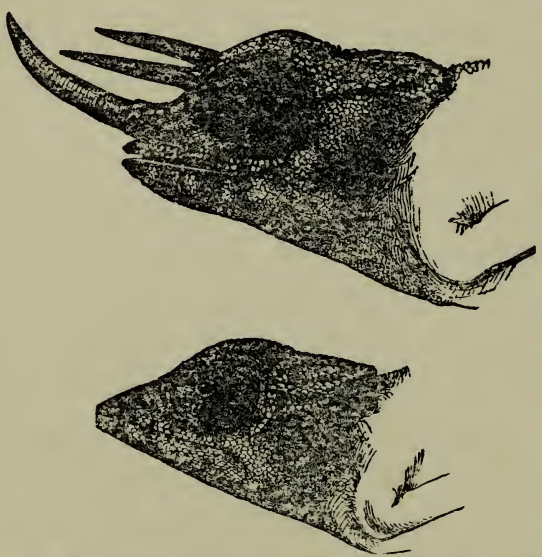


Fig. 8.—Chamæleon (*Chamæleon Owenii*).
Upper figure, male; lower figure, female.
(From "The Descent of Man," by C. Darwin.)

attains to nothing more than a croak; but some frogs can mew like cats and others bark like dogs. The ponds in spring and summer will sometimes resound with the massed concerts of the lovers.

Coming to the reptiles, we find that the decorations of the lizards take in the males the form of crests, horns, and exposed bare skin, which is often vividly coloured with all the hues of the rainbow (Fig. 8).

The mouth is also often brightly tinted. Male lizards frequently fight amongst themselves for possession of the females. In the crocodiles also fierce battles occur among the rival males. Though one might expect ferocity from the crocodile, with his tremendous jaws filled with sharp teeth, we would scarcely credit him with coquetry; and yet Pycraft relates that after the battle the victor capers about the female, twirling around on the surface of the water with head and tail raised high in the air and body swollen. This is accompanied by loud bellowings and roarings which are not heard at any other time than the mating season of the year.

The most varied forms of courtship are found among the birds. The means employed for alluring the females differ greatly. Some of the males are distinguished from the females by their plumage, which they display in the most attractive manner. The example most familiar to us is the peacock. Though the female is unadorned, the male peacock possesses a gorgeous tail which he spreads out like an enormous fan before her during courtship. When he thinks she is near enough, he suddenly whirls round to show her all his splendour, accompanying this action with a loud scream and a rapid motion of the train, which produces a sound like the pattering of rain on the leaves. Thus he stands before her with bowed head, that she may admire his beauty to the full. No wonder we speak of a conceited person as being "proud as a peacock."

Another beautiful bird with similar adornment is the Argus pheasant (Fig. 9). Besides a decorated tail, the male has enormously lengthened wing

FIG. 9.—THE ARGUS PHEASANT.

(From "The Descent of Man," by C. Darwin.)

feathers marked with oblique stripes and rows of dark spots. These ornaments are only exhibited

when he courts the female. He then erects his tail and opens his wing feathers, thus forming a great upright circular fan, which is carried in front of the body and conceals the head. In order to discover whether the female is giving him the attention he deserves, he constantly thrusts his head through this screen, so that many of the feathers get much worn. In the breeding season the male removes all dead leaves from a space in the forest some six or eight yards square, which he keeps very clean. This he never leaves, but at frequent intervals he utters a loud "How-how-how-how-how!" to inform the females of his whereabouts. As soon as one of them approaches, he exhibits his finery over and over again for her admiration.

Less showy, but not less significant, is the display of the male turkey and of the common farmyard cock, which most of us have seen. The former struts about the yard with a mincing gait, his tail being raised to form a half-circle, while the back feathers are set all on end and the wings trail along the ground. The bare skin of head and neck become suffused with blood, and a long fleshy wattle that hangs from the forehead becomes inflated. Great show is made of this, and the effect is heightened by a "Gobble-gobble!" quickly repeated. The same strutting about and parading before the hens is noticeable in the ordinary cock, who, though he has relatively little to boast of, makes up with impudence and conceit for what he lacks in beauty.

Though the male attire of the turkey and the cock is permanent, there are other birds, such as ruffs, herons, egrets, etc., which change their dress especially

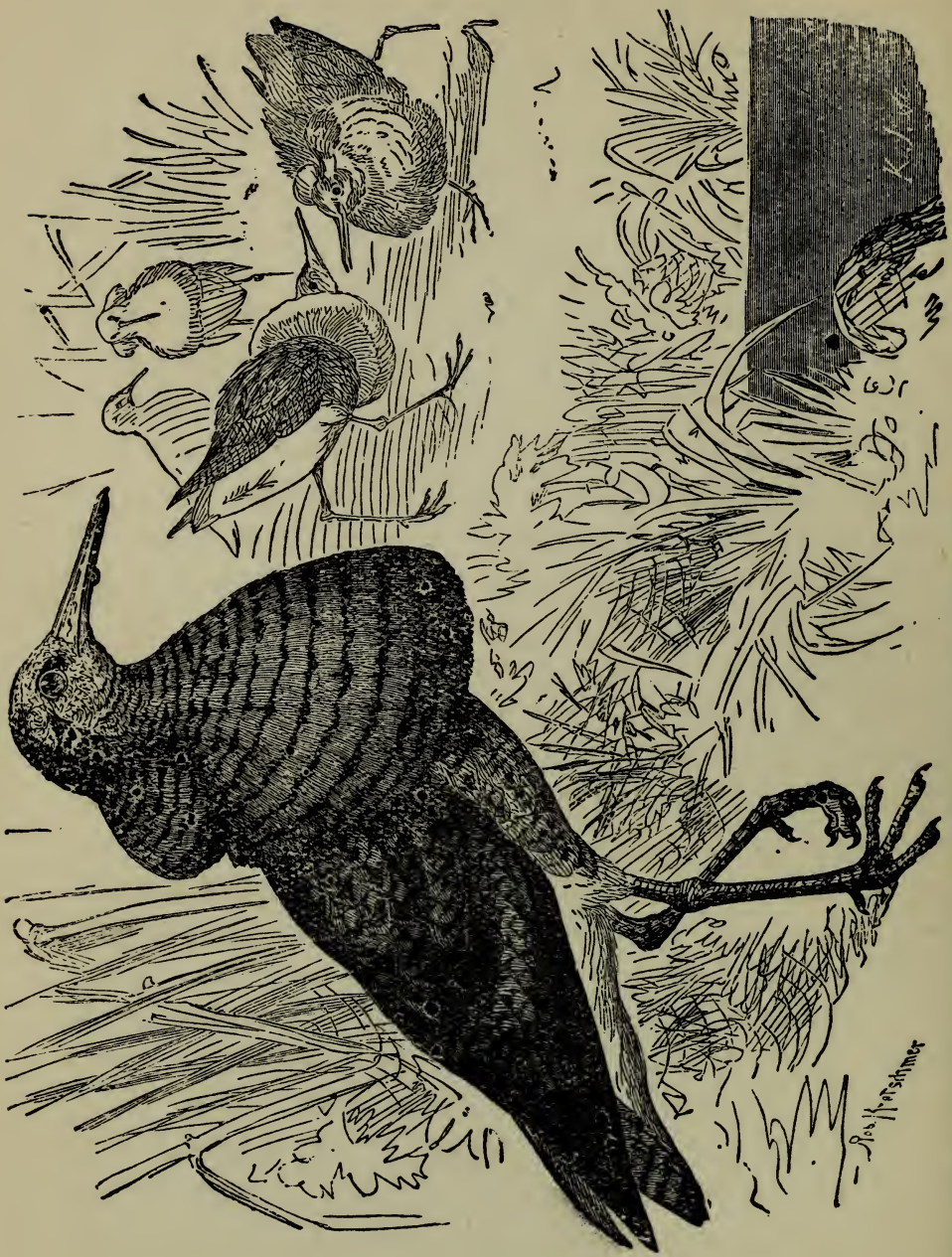


Fig. 10.—The Ruff Bird.

for the pairing season. In the Ruff bird (Fig. 10) the adornment of the male for the nuptial season takes the form of a great Elizabethan ruff, which

encircles the neck immediately behind the head, and of long tongue-shaped "ears" which surmount the head. These vary greatly, being coloured red, cream, buff, black or white, or with spots and stripes, no two ruffs being alike.

FIG. 11.—BELL BIRD (*Chasmorhynchus Nivens*).

The adult male shows the ornamental appendage in inflated condition; the young male shows it in flaccid condition.

(From "Darwin and After Darwin," by G. J. Romanes. By permission of Messrs. Longmans, Green & Co.)

An extraordinary decoration is that of the Bell-bird (Fig. 11). The female is dusky green in colour; but the male is white, with the exception of a tube three inches long, which rises from the base of the beak and communicates with the palate. Under the

excitement of courtship this tube becomes inflated from within and then stands erect; when not inflated it hangs down limply.

The most glorious ornamentations are to be found among the Birds of Paradise, which well deserve their name. The plumage of the males takes the form of most wonderfully coloured appendages, often of such a size as seriously to hinder the birds in their movements. The illustration (Fig. 12) shows the great variety of adornments. What a pity it is that some women are still so primitive as to deck themselves in "borrowed feathers," which have to be torn from these beautiful birds while they are alive! Perhaps the day is not so far distant when women will be civilized enough not to be eager to emulate the fashions of savages.

There are male birds of other species that have no conspicuous or brilliant sex ornamentation; but, like some of the birds blessed with a finer appearance, they are in the habit of performing love antics and fantastic dances during courtship. Thus, for instance, the Blackcock goes through a strange dance, uttering almost continuously loud and piercing noises. "He holds his tail up and spreads it out like a fan, he lifts up his head and neck with all the feathers erect, and stretches his wings from his body. Then he takes a few jumps in different directions, sometimes in a circle, and presses the underpart of his beak so hard against the ground that the chin feathers are rubbed off. During the movements he beats his wings and turns round and round. The more ardent he grows, the more lively he becomes, until at last the bird appears like a frantic creature. At such

FIG. 12.—BIRDS OF PARADISE.

(From "The Courtship of Animals," by W. B. Pycraft.)

FIG. 13.—BOWER BIRDS.

(From "A Dictionary of Birds," by Professor A. Newton.)

times the blackcocks are so absorbed that they become almost blind and deaf. . . . Hence bird after bird may be shot on the same spot, or even caught by hand." After performing these antics the males begin to fight among themselves.

A further step in the process of courtship is taken by the Bower-bird, who prepares a love arena. He builds a special bower with twigs, brightly coloured feathers, blanched bones, and sometimes flowers (Fig. 13). He chases the female in and out of this bower, carrying the while in his beak a brightly coloured leaf or feather, as if to tempt her with thoughts of the nest (this is built on the tree above the bower when mating has taken place). Some species have a long run, decorated with shells, which are sometimes brought from a long distance. The Gardener bower-bird erects a hut-like structure of twigs arranged around a central support and gaily decorated. Before the entrance lies a carpet of moss, which is kept clear of all rubbish, such as dead leaves, faded flowers, etc.; and upon this are laid vividly coloured fruit, seed-pods, and flowers.

The most remarkable feature of the birds is their wonderful power of song, unequalled in all creation. The greatest compliment that can be given to a human singer is to compare the voice to that of a bird. The music of birds has been the constant delight of man; and poets of every age have sung in praise of the feathered songsters. Who does not know Shelley's poem "To a Skylark" or Keats's "Ode to the Nightingale," or Shakespeare's "Hark, hark, the lark"? Not to mention poems by Wordsworth, Meredith, and others no less famous.

The singing is chiefly confined to the male birds, and serves to allure the females during the mating season. The song contests often go on among the males until some of them drop from sheer exhaustion.

But courtship among birds is by no means restricted to such peaceful contests as described. Not only do big birds of prey fight each other for the possession of the females, but even among smaller birds the pugnacious instinct is very frequent. Some species are furnished with special weapons, such as spurs, etc., for this purpose. The ordinary farmyard cock is an example: he can brook no rival; his quarrelsomeness is proverbial.

As we ascend to the higher animals, such as cattle, deer, the dog and cat tribes, elephants, etc., we find that brute force prevails among the males as a method of procuring the females, and that most of them are furnished with special weapons for this purpose. Thus some animals fight with their fangs, or possess special tusks, as does, for instance, the wild boar. Where both sexes have tusks, they are generally larger in the male; an example is the elephant. A good many animals have horns or antlers (Fig. 14). Even where the females possess horns, these are usually less developed than in the males. Stags are known to fight ferociously for possession of the females, both rivals sometimes losing their lives in the fierce struggle. The antlers of the deer develop annually, ready for the mating season,—which in this instance is in the autumn—and are afterwards shed, being renewed every spring with an additional point. The stags make a roaring noise in order to attract the females (Fig. 15). In the majority of higher species, how-

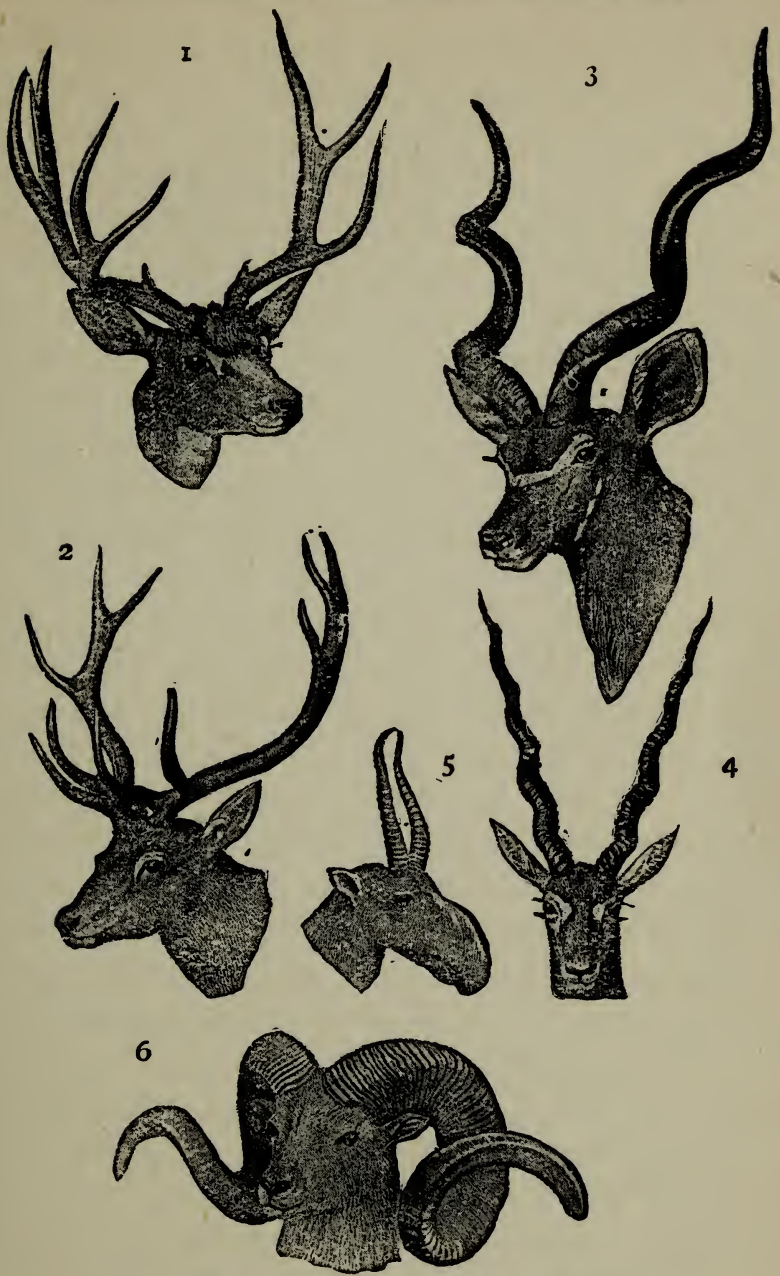


FIG. 14.—HORNED ANIMALS.

Weapons of Offence.—Horns of various types furnish the most conspicuous of the "secondary sexual characters" of the ruminants. In the Deer only are these branched. In the "hollow-horned" ruminants they are either lance-like or more or less spirally curved, or they may form more or less open loops.

1. Black-tailed Deer. 2. Hangul or Kashmir Barasingha Deer. 3. Greater Kudu. 4. Black-buck. 5. Saiga Antelope, remarkable also for its curiously swollen nose. 6. Marco-Polo's Sheep.

(From "The Courtship of Animals," by W. P. Pycroft. Explanation of numbers by the courtesy of Rowland Ward, Ltd.)

ever, the only difference between the sexes is the larger size and greater strength of the male, except for occasional appendages, of which the mane of the male lion is the most familiar example.

Some animals, such as the Musk deer and the goat, have glands which secrete a fluid having a pungent odour. It is generally in the male that this secretion is formed, and only during the breeding season. The scent is supposed to excite the female for the act of pairing. The secretion of the musk deer, when diluted, forms the basis of some of our most valued perfumes; and for this reason the animal has been persecuted for many generations, thus showing that human beings still have tastes in common with the animals.

We have already remarked that courtship takes place at certain seasons which are different for the various animals. During the mating season animals become very excitable, the males being attracted to the females and seeking them at all hazards. This sexual state among the mammals, such as the rabbit, cat, dog, pig, cattle, horse, etc., is known as the " heat " or " brunst " period; in males especially as the " rut." The sex organs during this state become turgid, and the females often show a discharge of mucus, mixed with more or less blood, from the sex passage (which will be described later). This stage indicates the greatest sexual desire, and it is only during this state that the female will admit the male for mating. Some animals have more than one sexual season in a year; thus the dog has two, one in spring and one in autumn.

Among the apes, the highest animals before man,

FIG. 15.—STAG ROARING.

the face and head parts are often ornamented with vividly coloured patches in blue, violet, or red, which are generally more pronounced in the male, and become more brilliant in both sexes during the breed-

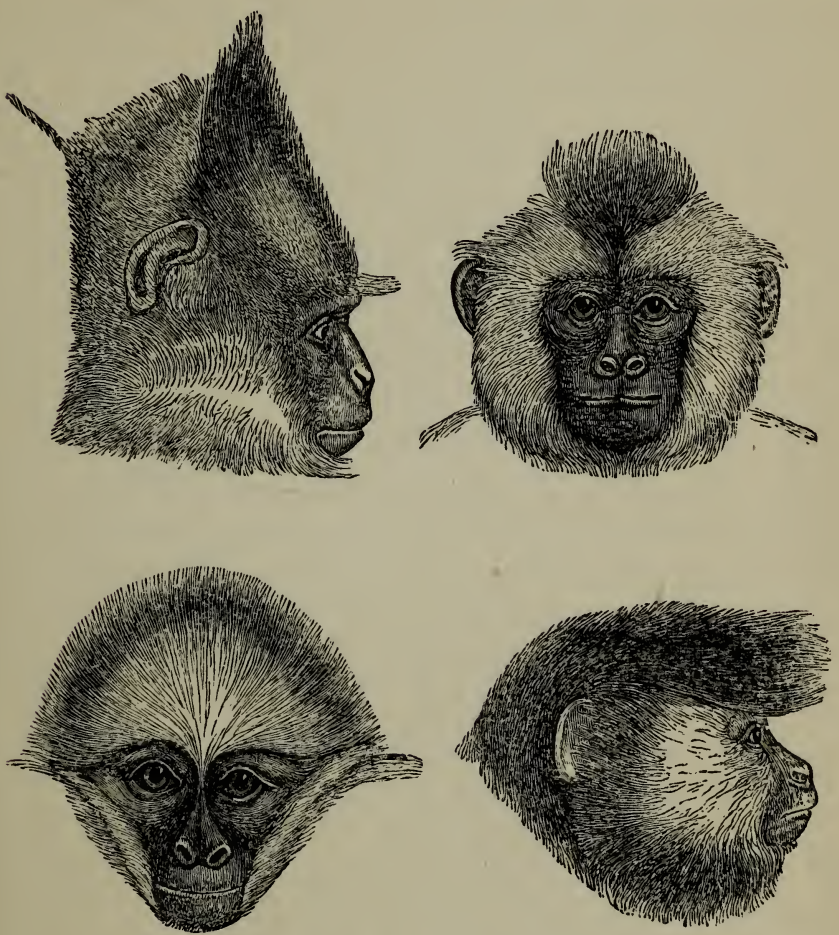


FIG. 16.—MONKEYS.
(From "The Descent of Man," by C. Darwin.)

ing season. In some species the males are characterized by strange and sometimes grotesque hairy growths, such as manes, beards, tufts, etc. (Fig. 16). The females of some of the higher apes have a regular

sanguineous flow from the sex organs every month, just like the human female, as we shall see later. But while Man has no special breeding season, this still occurs in some of the apes, Gorilla, Chimpanzee, etc., thus forming a transition stage between Man and the lower mammals.

CHAPTER II

COURTSHIP IN MAN

In man courtship follows the same lines as in animals. Thus among human beings there is fighting, display, and competition, although they take different forms and become more conscious in their expression. It is only as man becomes more civilized that to the physical there is added a spiritual element. Courtship by means of brute force is gradually abandoned, and more refined methods become more and more prevalent; a woman is then often enabled to choose her partner in marriage instead of being forced to the union. Display remains a fundamental factor in courtship, but the attempt now is more consciously artistic. Primitive man paints his body, but as paint is not permanent, he substitutes tattooing, which lasts a life-time. He uses also brightly coloured feathers and flowers; and in time, as man learns the use of tools, metals and stones are taken into service and moulded into ornamental shapes to decorate the body. Odds and ends, worn on any part of the body where they may prove most effective, are gradually replaced, as knowledge and skill increases, by the great elaboration of clothes which we know to-day.

Competition, which at first is based on mere physical prowess, also becomes more refined in its methods. At first there may be running and jumping tests, but after a time these take the form of tournaments, to which the chivalrous element is eventually added. And these in turn are superseded by less obtrusive, but just as effective, competition in the intellectual and moral fields.

Another fundamental difference arises which distinguishes the courtship of Man from that of animals. While in the brute creation courtship is based on purely physical desire—very little affection entering into the sex relationship, except in some birds and higher animals—the spiritual element of love gradually increases as man progresses in civilization, until now we do not consider any sex relationship truly human which does not contain a large element of spirituality, in addition to the physical passion.

1. Puberty.

Spirituality shows itself quite low down in the human race. Thus, while in the brute creation, as soon as sexual desire is felt, the animal simply goes for the object of his wishes without any conscious thought, in human relationships there is always a conscious element. This shapes itself among primitive races into a supernatural cult, which forms the first beginnings of religion. All vital functions of life, such as birth, marriage, death, etc., inspire the savage with awe and assume a sacred aspect. Their occurrence is always marked by special religious ceremonies.

The advent of puberty is one of these important

periods of life. This stage is marked in the boy by a change in his voice, which becomes rougher and deeper—this is called the breaking of the voice; hair begins to grow in the armpits and especially on the lower parts of the abdomen, called the pubic region or pubes. There also appear at this time the first indications of beard and moustache, so anxiously awaited and so tenderly fostered by the growing youth. In girls, apart from the appearance of hair in armpits and pubic regions, the most evident signs of approaching womanhood are the first roundings of the breasts, and a broadening of the hips due to the widening of the pelvis in preparation for the function of motherhood. The one absolutely definite sign of puberty in girls, however, is the appearance of the period or menstruation—that is, the periodical flow of blood from the womb through the female sex passage called the vagina. In the first year or so this flow is irregular, but when finally established it generally recurs every lunar month and lasts from three to five days on an average. The intervals between these periods may vary in length—sometimes lasting less, sometimes more than a month—without any signs of ill-health. The age when menstruation commences varies from twelve to seventeen years; it is earlier in hot climates and in towns, and later in colder regions and in the country.

The attainment of puberty is celebrated by special rites of initiation, which serve to introduce the young people to their tasks in life. They are very widespread, taking place all over the world, and only differing in character as the religions of the races vary. The idea at the base of these rites is that the boy and

girl have become ripe for their duties as members of the tribe, and are themselves henceforth responsible for their own behaviour. It is now also that they are considered to have reached the age when they are fit to marry, to bear and rear children, and to serve the community. Our custom of confirmation is a modification of this idea. Among modern civilized nations the young people who have attained puberty and are confirmed become responsible members of their religious community only.

The initiation rites are attended by great festivities, which sometimes last many weeks, according to the wealth of the parents and relatives of the young people. But before these can be entered upon, various ordeals have to be undergone by the youth or maiden who has reached this eventful period. A youth must be skilful in manly crafts, and must show himself brave and capable of enduring pain without wincing. He is tested in various ways, which would seem to us torture or something akin to it. He must not move a muscle under the trial, nor show in any manner that he is not experiencing pleasurable sensations; otherwise he has not proved satisfactorily that he is fit to become a member of the community to which he belongs, and must go back again to live with the women. This is considered a great disgrace, and therefore much dreaded. In many tribes it is customary to knock one or two front teeth out of the boy's mouth, or sometimes some of the teeth are filed. Tattooing is also frequently performed on the boy's body at this time. That this must be endured without a murmur goes without saying. There is great rejoicing if the lad has come successfully through

FIG. 17.—INITIATION COSTUME.

(From "Das Weib in Natur und Völkerkunde," by H. Ploss.)

FIG. 18.—MATURITY COSTUME.

(From "Das Weib in Natur und Völkerkunde," by H. Ploss.)

the ordeal. He is presented with the appurtenances of a man, such as hunting and fishing tackle, and weapons, such as spears, shield, etc., and of these the youth is extremely proud. Then comes the most important event—namely, the initiation into the secrets of the tribe. The boy is also taught by some elders of the tribe the functions of sex and of his duties to his kin. The rejoicings often take the form of ceremonial dances, which sometimes have a religious significance. At this period of initiation the sexes are kept strictly separate, any breaking of this rule being severely punished.

The girls in their turn also have various ordeals and rites to go through, but these differ in character from those of the boys. As soon as the girl notices the first sign of the menstrual period, she must inform her mother of the fact. No secret is made of this change in the life of the young girl. On the contrary, it is announced with great rejoicings that she has now reached womanhood. The girl henceforth wears a special costume or ornaments (Fig. 17 and 18). In Japan, on attaining puberty, the girl for the first time dresses her hair with a special pin for this purpose. In some tribes (South Sea Islands, Caroline Islands, etc.) a hut is built for her apart from the rest, which she must enter as soon as she is aware of the onset of the period, and where she has to remain for a certain time, which varies in different tribes. Some foods are now "taboo"—that is, forbidden to her; she must not touch or eat them. Sometimes she has to sit or lie in certain positions, another woman perhaps watching her to see that she does so even when asleep.

She also has to show endurance of pain without flinching. The two front teeth are sometimes knocked out or filed as in the case of boys. She is often tattooed ; sometimes cuts are made on the body in order to produce raised scars in some pattern, and these are considered a great addition to beauty (see Figs. 19 and 20). In some tribes the girls are severely whipped until they fall down from sheer exhaustion. At intervals between the whippings the girls are given nourishing food to strengthen them.

When the period has ended, purification and anointing of the body is performed. In some cases the hair is cut off, completely or in parts. There is also the custom of boring holes through the nose, the ear lobes, and even the lips. This custom of piercing the ears still persists among civilized people. There are many women who are highly amused at the nose and lip rings of the savages, and yet do not realize that earrings are after all, a similar savage survival. The belief which is still prevalent, that the piercing of a child's ears affects its eyes, is thus shown to be a mere superstition.

Just as the boys, so the girls are instructed in all the functions of life, even the most intimate. (This might serve as an example for our civilized mothers, who are generally so backward in this respect.) They have, of course, also to show that they are capable of fulfilling the duties which are expected of women—namely, the preparing of the various dishes and the management of sundry household duties. In some tribes they have to carry red-hot coals for some distance to harden the hands. Another test of efficiency is for the girl to pick up something from the ground

behind her, which she does by bending her back and catching up the article with her lips. She has also to pass her examination in the ritual dances. Should she succeed in all such tests, her mother will clap her hands and say, "My daughter is good;" but if she fails, she is beaten. After all such ordeals are safely overcome, the girl is taken into the tribe as a full-grown woman, with all the rights and duties of that station.

The recurrent periods of menstruation are marked by seclusion; for primitive folk look upon menstruation as "taboo," that is, a supernatural, uncanny phenomenon which has to be guarded against. The natural physical cause of the bleeding being unknown, it is often attributed to the bite of a snake or other reptile, or to evil spirits which have to be exorcised. The belief in the unnaturalness of menstruation has led to a great many superstitions, some of which persist even nowadays. Thus a woman during her period must refrain from many duties which otherwise fall to her lot. She must not sow seed, or the corn will wither; she must not bake bread, as it will go sour; she must not churn milk and make butter, for fear of its turning; and she must not at any cost come near men going out to the hunt or to battle, for fear of ill-luck pursuing them. Some of these superstitions are not yet extinct, even among so-called advanced people; for the stigma of impurity or unholiness during this period still lingers on. Thus even now she is sometimes told not to water plants or make pickles. There is also a general dread of women taking a bath during menstruation, though medical evidence shows that washing and bathing

during the period are quite harmless—nay, beneficial. The more water, the better.

2. Means of Courtship.

Once initiation has taken place, the young people are considered of suitable age for marriage, and so henceforth courting is permitted. As has been mentioned before, the courtship of human beings differs from that of the animals in its conscious element. The effectiveness of decoration and display as aids to natural beauty is carefully considered. Once again the difference from animals shows itself in the fact that among human beings not only the male, but also the female, puts on ornaments to charm the other sex. It was the man, however, who first decorated himself, and the woman followed. It seems strange that for these decorations the human being, savage and civilized, will rob the finery of the animal and bird creation. Perhaps primitive man, noticing the beauty of feathers and skins, thought that these would help to increase his own beauty, and so did not scruple to take ruthlessly what did not belong to him. We sometimes find head-dresses of an enormous height composed of the most gorgeous feathers; sometimes girdles are made wholly of feathers, as are also necklets.

Primitive man is very childlike in taste. He, like the child, loves bright glaring colours. He also, like the child, loves to "show off" whenever possible; so that, although one of the reasons for self-decoration is the wish to find favour with the other sex, and thus to acquire a mate, yet it is indulged in even when it does not serve the purpose of courtship.

Now the ideals of beauty vary considerably. As a rule, the type of beauty which is sexually attractive to one sex is that most characteristic of the other. Thus, men generally admire women with features possessing the most pronounced female sexual characteristics; while women, on the contrary, are attracted by manly strength and vigour. But in addition to this rule, we find also special types of beauty admired by different races, generally that which approaches most nearly to each racial type. Thus, among the Hottentots the women have a natural tendency towards accumulating fat on the hinder parts of the body; this feature is greatly admired by the men, and is therefore cultivated. The blacks appear, on the whole, repulsive to us, nor do they admire white people with their long noses, preferring instead flat, broad ones. Nor do our women appear beautiful to the Chinese. It is reported of a man of the court in Cochin China that he spoke with contempt of the wife of an English ambassador, because she had white teeth like a dog and cheeks rosy like the colour of a potato flower. This remark explains, perhaps, the habit of blackening the teeth as practised by some races, such as the Japanese, who do this, they say, "in order not to look like pigs"; though this practice is dying out among the Japanese.

Not being satisfied, however, with the beauty bestowed by Nature, people are constantly striving to "improve" on Nature, and so try by all sorts of compressions and other means, even mutilations, to make themselves still more beautiful. Thus, it is

well known, for instance, that in China, where small feet are natural, women's feet are tortured from infancy by tight bandaging, until they become so distorted that they can hardly serve their natural purpose of walking. This custom, however, is now on the wane, due to European influences, and it may henceforth perhaps be possible for a Chinese belle to find a husband though she have normal feet. In one of the South American tribes a swollen calf is considered to add to the attraction of a girl; and so they wear, from childhood onwards, tight garters below the knee in order to enlarge the calf by compression from above. Even women of civilized countries are still given to similar practices; note, for instance, the squeezing in of the waist by modern women in order to "improve" the figure. This is done by means of a corset, and must necessarily impede regular breathing and bodily movements; indeed, it often leads to serious disturbances of health. As if a natural waist line is not far more beautiful than one distorted by artificial methods! Think of the Venus of Milo and, in contrast to her, of the stiff whalebone-sheathed models exhibited by the corsetière. As a matter of fact, many of our more advanced girls given to sports and games manage to develop their figures without the aid of such medieval appurtenances.

There are other extremely quaint methods of beautifying the human body. Among the tribes to which clothing is still unknown, the whole of the body may be used for decoration. Thus some primitive folk paint their bodies half red, half white. Tattooing is a very prevalent custom among savage people, and

has even found its way to European lands (Fig. 19). Many sailors and soldiers have some emblem of the girl they love tattoed on arms, chest, or other part of the body. But it is carried to a much greater extent amongst primitive people, and is often very elaborately and skilfully done. Sometimes the design follows the lines and curves of the body. All sorts of fanciful designs are used, some of which may possess significance; thus they may represent the emblem or totem of the tribe or caste. A still more extreme method of making permanent patterns on the body is the production of raised scars, a method which would hardly appeal to us, yet which is frequently undergone by primitive folk without a murmur (Fig. 20). How much people will suffer for the sake of beauty!

Fig. 19. – Tattooing. (After H. Ploss.)

People of all races love to adorn themselves with bright metals and precious stones, the more the merrier; and these are used even when very little clothing is worn. At the initiation ceremonies girls are hung about with as

many showy things as possible. The clothing often consists only of a small apron or girdle, but the girls will wear heavy earrings, nose-rings, lip ornaments, weighty necklaces hanging down to the waist, made of bone rings, beads, shells, polished teeth of animals, and precious stones when they are to be got. In addition, she will have bracelets and anklets and elaborate head-dresses. A Santal belle is described as follows: "She wore two anklets, perhaps twelve bracelets, a necklace weighing a pound, and the total weight of ornaments amounted to thirty-four pounds of metal." In one European country, Albania, the girls wear their dowry in gold coins round their necks, their skull-caps made of scarlet cloth are surrounded with rows of coins, and coins are intertwined with their plaits.

3. Methods of Courtship.

So far we have had a description of the means of attraction employed during courtship; we now come to the methods of courting. There really is not much courtship among savage races, for what we call "love" is, on the whole, hardly known to them. It is generally customary for the parents to arrange the match, the young couple having little if anything to say in the matter. Amongst some nations, as the Japanese, for instance, a marriage broker is the go-between and arranges the matches. But still, where there is a choice by the young people, or even when the parents alone choose, there is always upheld a standard of bravery and skill to which those who desire a mate must conform. This differs with the district. Thus in the neighbour-

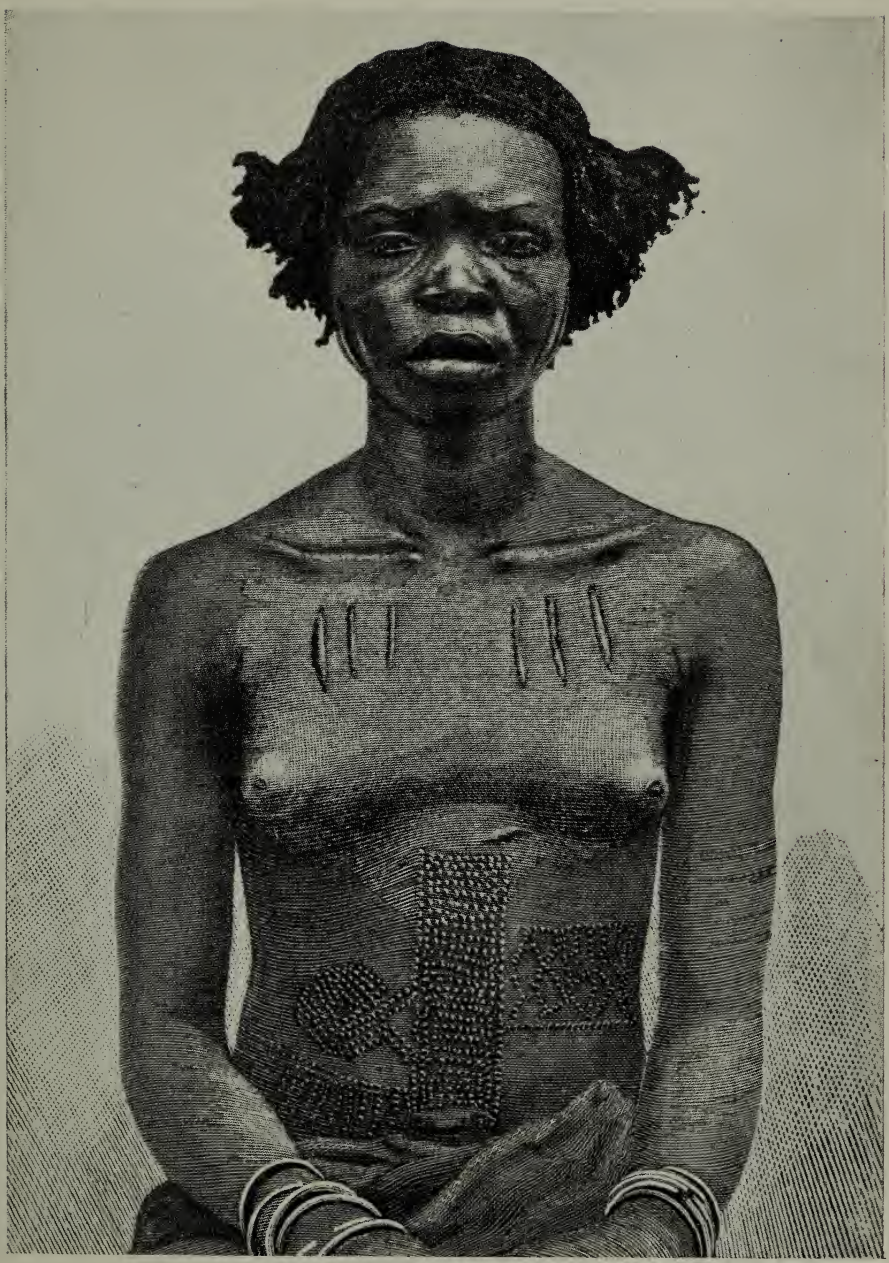


FIG. 20.—ORNAMENTAL SCARS.

(From "Das Weib in Natur und Völkerkunde," by H. Ploss.)

hood of water it is the expert diver that stands the first chance with a girl or her parents. In other regions it is the man most skilled in throwing and catching spears. At one time among a tribe living south of China, it is said to have been customary to give honour to the greatest thief, and it was he that had the pick of the girls. Amongst some warlike races a man cannot marry at all, unless he can bring home the head of a slain enemy; whilst the man who brings the most heads has the best choice among the girls. What a gruesome manner of courtship! Yet naturally, in primitive society, such a husband would be the most capable of defence.

Duels and wrestling matches also play a prominent part in the game of human courtship; and, as in the animal combats, it is the victor that carries off the prize. A curious custom was resorted to by one tribe in New Zealand. "When the girl had two suitors, a pulling match was arranged in which the girl's arms were dragged by each suitor in opposite directions, the stronger man being the victor." In this it was the girl that was the sufferer; but there are cases when it is the male lover that has cheerfully to endure suffering for the sake of his love, as, for instance, in the following primitive example among the Dongolowees: "The girl sits with a knife tied to each forearm, so fixed that the blade projects below the elbow. She then takes up a position on a log of wood, the young men sitting on either side with their legs closely pressed against hers. Raising her arms, the girl leans forward and slowly presses the knives into the thighs of the would-be husbands. The suitor who best undergoes this trial of endurance wins the

bride, whose first duty after marriage it is to dress the wounds she herself has inflicted."

Among other races competitions in feats of skill take the place of these barbarous customs. Perhaps the best-known story of this kind is that to be found in Homer, who describes the return of the hero Ulysses to his faithful wife, Penelope, after twenty years of wanderings. She had been importuned all these long weary years by her suitors to choose one of them, since, so they said, Ulysses was surely dead. Just at the time of Ulysses' return she had so far given in as to arrange for a competition between them: the one who could send an arrow through a line of double axeheads was to win her for his bride. It is well known how Ulysses, who was the only one capable of performing this feat, slew all the suitors.

Running races were also often held among various people for the men, the winner gaining the bride. We may cite here the Greek legend of Atalanta, a king's daughter, who herself ran races with those who aspired to her hand. She had vowed only to marry the man that could outrun her. If she won, the poor lover literally lost his head. She was so very beautiful that, in spite of the danger, many noble youths were tempted to enter the race, each in turn, however, forfeiting his life, for she was so fleet of foot that no one could overtake her. There came at last a youth who, favoured by Venus, contrived to win the race. He dropped in succession three golden apples given him by the goddess, each time at a critical moment. These tempted the maiden irresistibly, so that she lost time by picking them up, thus enabling

her lover to reach the winning-post first and gain her for his bride.

Dancing, which is one of the favourite pastimes of all races and of all times, becomes a natural method of allurement in human courtship. The mere physical movement is apt to bring about a heightened feeling of bodily exhilaration and a corresponding mental elation. It is therefore not surprising that so many unions come about at the dancing-places all over the world. This holds good even more for savages than for civilized people. Among many races the men and women dance separately, and so can show off their skill to each other. A young man who is a good dancer finds great favour in the girl's eyes. As a chief of Mabuiag (Torres Straits) put it: "In England, if a man has plenty of money, women want to marry him; so here, if a man dances well, they too want him." Some of the dances—those of the Faroe Islanders, for instance—may last for two days and nights, and are a permitted method by which the young men may court the girls. "The man enters the circle and places himself beside the girl to whom he desires to show his affection. If he meets with her approval she stays and continues to dance at his side; if not, she leaves the circle and appears later at another spot." The dances among primitive folk very often take a voluptuous form and end in orgies. Among civilized people, dancing is more of a social pastime, though its sexual origin is not completely lost. Fond mothers still find the ball-room the best place for match-making, a method which is by no means altogether groundless.

There are other more subtle methods of courtship,

where choice is somewhat more individual, though still left a good deal to chance. Thus it was quite a common custom for men to pick their brides at the fair, in England as late as the seventeenth century, just as they chose, and still choose, hired labourers in remote country places. The maids were decked out in all the finery they could gather together. We read of a Russian mother who, not knowing what she could add to her daughter's toilet on one of these occasions, contrived to make her a necklace of six dozen gilt teaspoons, with a girdle of an equal number of tablespoons, and then fastened a couple of punch-ladles behind in the form of a cross.

This manner of choosing a partner still finds, perhaps, a reflection in modern children's games. It has been pointed out by students of folk-lore that children's games, nursery rhymes, folk-songs, etc., often represent corrupt versions of actual customs as practised by grown-up people in ancient times. They lose more or less of their original sense and meaning in the verbal transmission through the ages. In most cases, however, the reference to bygone usages can still be made out. Of some of these games we may perhaps make mention in connection with our subject. Thus there is the well-known "On the mountain stands a maiden; who she is I do not know," "Poor Mary stands a-weeping," "Rise, Sally Waters," "Silly old maid, she stands alone," "Silly old man, he wants a wife," and many more. In all these games the lover is chosen out of a ring formed by the other players, and there is often a chase, which is followed by a kiss upon the capture of the chosen one. This custom of standing in a

ring for choosing a lover reminds us of the custom of choosing a mate at the fair.

But less direct methods of obtaining a lover are sometimes resorted to. In some parts of modern Russia the names of eligible young men are written on slips of paper, and then thrown into a bran-tub. The girls fish for the slips with long spiked sticks. The happy man whose name is drawn is expected to kiss the girl and "walk out" with her with a view to marriage. A favourite variation of this method of choosing by lot we find described in literature. One of the best-known instances is that in Shakespeare's "Merchant of Venice," where, by the father's will, Portia may only marry the man who chooses the right one of three caskets. There is also a story of a Chinese princess named Turandot, who set her lovers three riddles to guess; the one who solved them married the princess, while the other poor men were executed.

Faith in the efficacy of love-charms and love-potions used to hold great sway over people of all countries, and has not completely died out even among white races. One of the explanations of this idea is, that primitive people believe in magic and are convinced that good or bad qualities can be communicated, just as they believe that diseases can be transferred by magic procedure from one person to the other. All that was thought necessary was to get possession of something belonging to the person who was to be worked upon, and to attach the magical spell to it. As regards love-magic, the person who wanted to gain another's love would use something belonging to himself or herself as a love-charm and send it to the beloved. Naturally, something directly

from the body would appear most efficacious; so the lover would try to impart his love to the girl of his choice by sending her a lock of his hair, in the hope that, as the lock contained part of his personality, contact with the gift might imbue her with the same feeling as he had towards her. Something that has been in close contact with the body, or, better still, that has been permeated with the sweat of the lover, will also do this service. Another method resorted to for "charming" the beloved person is to get some article of apparel, sing a charm over it and get that person to wear it. Such person then will, according to the saying, see "lightning" on receipt of it, and it will make "the inwards shake with emotion." In ancient India the girl would make a clay image of her lover, and shoot an arrow through the place where the heart would be, thus thinking to pierce his heart with love as she pierced that of the image. In one part of Germany, during the Middle Ages, an effigy of the figure of the beloved or of his heart was made out of wax or some other such substance, with the name of the beloved person inscribed on it, and this was then either melted or burnt. Four-leaved clover stuck into the shoe is still considered a lucky love-charm in many European countries.

Love philtres of all sorts of fantastic brews, or of foods with a few hairs of the lover baked in, or other substances which would seem most nauseous to us, have been used and are still made use of in remote country places. These are given to the person on whom an impression is to be made, and who partakes of them unknowingly. A famous instance is that of Tristan and Isolde, who were consumed with

fiery love for each other after drinking of the love-potion given to them by Brangaene.

Love-oracles also were much in vogue in olden times, and have not yet died out even among civilized people. A familiar playful device for ascertaining successful love, reminiscent of the old love-oracles, is that of pulling out the petals of a daisy to the refrain "He loves me, he loves me not." The coincidence of the last petal with one of the formulas indicates the result of the love. Goethe in his "Faust" lets Margaret, who is in love with Faust, make use of this method. There are, further, the All Hallowe'en customs of finding out one's future partner by quaint devices, such as looking in the mirror at midnight for the reflection of the lover; and various others, too numerous to be detailed. Perhaps the best-known example is the still prevalent superstition that the man of whom a girl dreams when she has a piece of bride-cake under her pillow will eventually become her husband. To the same category belongs the practice of throwing apple-peel over the shoulder, in order to see which letter of the alphabet it resembles when it has dropped. This letter is the initial of the sweetheart to come. The device is rather interesting from the fact that children have a similar game in skipping. Starting with the saying: "Raspberry, gooseberry, apple jam tart," they go through the alphabet whilst skipping; the letter at which the child breaks down in jumping over the rope is here also the first letter of the sweetheart's name.

An appeal to fate as an oracle can be seen in the old custom of choosing a mate on St. Valentine's day, of which we still have a relic in the sending of Valen-

tines. The man upon whom the maiden first set eyes after the dawn of the day, was expected to be chosen as her mate for a year. We can well imagine that the young people took care to help fate by arranging that the right lover was on the spot at the propitious moment.

Courtship, as described so far, is characterized by appeal to brute force, to physical competition, or, it may be, to crude superstition, with very little personal feeling entering into the relationship. But the spiritual emotion in love slowly develops, as mankind gradually rises in the scale of civilization, until it attains its full height in the modern ideal of love. This is, according to Ellen Key, a combination of physical and spiritual feelings in perfect balance, where the lovers supplement each other, and where each is willing and ready to sacrifice everything for the love of the other. It is then that courtship becomes individual; every person has his own method of gaining the love of the desired one, and there are few customs or standards to conform to. What we do find is different ways among people of giving expression to their love, and also in their mode of accepting or refusing this love.

Odd cases of individual choice crop up among lower races, though it would be hard to say whether they imply a real feeling of love. For instance, when a boy of one of the New Guinea tribes admires a girl, he will not look at her or go near her, but by posing and by attacking and spearing imaginary enemies before her, he will try to attract her attention. If the girl reciprocates his love, she will send him an areca-nut marked with different designs as a

love invitation. They consume this together at an appointed place at nightful, and this constitutes the betrothal. Again, among the Gilas of New Mexico, when a young man desires a girl for his wife, he will serenade her outside her home for hours daily, playing on his flute. Should she not appear, it is a sign that she rejects him; but if, on the other hand, she comes out to meet him, it is an acceptance.

It is a wide jump from New Mexico to modern Europe, yet in Spain, where love takes such passionate forms, the same custom of serenading prevails. A Spanish girl thinks her lover has not given her sufficient proof of his love if he does not serenade her; and she always knows how many musicians he ought to pay for doing this, when he cannot sing or play himself. Some of the girls in Spain also resemble those of less civilized races in their admiration of physical prowess, as evinced at bull-fights. Toreadors are in great demand among the girls, though their star is somewhat waning at present. Should a girl wish to reject a lover, she does not do so in plain language, but she gives him a pumpkin. He understands the meaning of this action and withdraws his suit. The German girl of Thuringia gives her suitor a sausage to eat when she wishes to give him a hint that his advances are not welcome to her.

In Japan, where most matches are arranged by a go-between and the parents, love will also have something to say sometimes. A man wishing to woo a girl will throw a flower into her litter as she passes, which she wears if she is willing to accept him. Similar customs abound everywhere. There is no need to give examples nearer home, as most readers have or

will some day have personal experience in this respect. All we can say is, that there is a tendency towards a spirit of greater mutual comradeship between the sexes. Girls are becoming more independent, and expect appreciation and respect rather than chivalry. Many things are permitted to them nowadays, which were considered immodest in the time of our grandparents. Now there may be doubts how far this change can be considered advantageous, but we must not allow ourselves to be guided by prejudices. To decide this question, there remains nothing for us but to enter into a more detailed account of modesty as a function of courtship.

4. Modesty.

Modesty* develops with the advent of puberty, and can thus be looked upon as one of the sexual characteristics of human beings, and especially of the female sex. We need only observe little children to see that they are destitute of all physical shame. In fact, it needs great perseverance to instil it into them, and they are slow in learning to appreciate the necessity of it.

Modesty has its origin, like most human sexual characteristics, in animal beginnings. Thus, among the animals the female sternly refuses any advances from the male at any other time than the mating season. Even during the sexual season the female by no means submits immediately to the male, but she plays, as it were, "a game of refusal and acceptance." She

* Modesty is used here in the sexual sense, like the French *pudeur*. There exists no special word in English for this special meaning of modesty.

runs away from him, then stops until he is close to her, then once more flees, but never far enough to be out of his reach. It is this very coyness that, by prolonging the preliminaries of mating, serves as an allurement to the male, and enhances the sexual ardour in both.

Now in human courtship we find coquetry a practically constant accompaniment of woman's behaviour towards man. This is often considered a peculiar failing of the female sex. Yet, when viewed from the biological standpoint, it is seen to be nothing else than the development of female coyness, which is a natural sexual characteristic and serves the same purpose in Man as in animals. It is the playfulness in human courtship that retards the final act of mating. It thus allows occasion for the interplay between youth and maiden of the erotic emotions, which, with the advance of civilization, have become more and more enriched, refined, and spiritual. Indeed, it may be said without exaggeration that without this amorous play, due to modesty, love might never have come into being.

Another source of modesty is furnished by the idea of sexual taboo. It has already been mentioned that taboos are connected with special events of life, and particularly with sexual phenomena. Now we find that primitive man, in his ignorance, dreads all the manifestations of sexual life as something uncanny and holy, and takes special precautions during sexual acts. There develops a sort of reverence for these taboos, which ultimately become stereotyped as forms of modesty, and often persist long after their origin has been forgotten. These forms are preserved

to us in ancient rites and religious laws of sex purification, etc.

Thus it comes about that greater obedience is paid to mere rules of convention than to actual feelings. Artificial regulations of sexual conduct take the place of natural modesty. As we have seen, modesty is a function of sex, and has as such nothing to do with nakedness of the body. It has been observed over and over again by many trustworthy travellers that primitive people who use little or no clothing are often intensely modest in their behaviour and speech. The scanty clothing they may possess serves more the purpose of " showing off " than hiding the body. In fact, it is now generally assumed that clothing was originally intended rather for ornament than for covering. Even with us the idea still prevails to a large extent, especially among womenfolk. Women who would blush to expose their shoulders and chest in ordinary life have no hesitation in doing so when in evening-dress, and with an assurance of doing the correct thing. With the gradual development of clothing, modesty tended to centre round different parts of the body, according to the national and religious customs of the people. While with us practically the whole body, except the usually uncovered parts, is under the ban of modesty, but especially so the parts connected with the sex functions, other races have quite different standards. Among Moslems women have to veil their faces, particularly when in the street, and they must not be seen with uncovered face by any man. The veiling may be very slight (Fig. 21), or it may take the form of a complete covering of head and face, so that

FIG. 21.—A TURKISH LADY IN OUTDOOR DRESS.

(From a picture by Warwick Goble.)

the women in their walking-out dress look more like bundles of clothes than living human beings (Fig. 22). Custom is so strong that women in these countries would rather expose almost any part of the body than the face. A woman of the Euphrates, if sur-

Fig. 22.—Street Costume of Woman of Tunis.
(After H. Ploss.)

prised bathing, will turn away her face rather than try to cover her body. In China, again, the women attach most importance to hiding the feet, and can hardly be induced to show the foot even to a doctor when necessary. This privilege is reserved for the

husband. It is considered rude even to look in the direction of a Chinese lady's foot.

The idea of modesty not only varies with different races, but changes according to the times. We have seen that nakedness is not necessarily a sign of immodesty. Ancient Greece is noted for the cult of the body. Athletic sports were carried on by the competitors in the nude state, and girls also took part in them. The nude body was thus a familiar object to the ancient Greeks, and to this is attributed the unsurpassed beauty of their statuary. This attitude prevailed for a long time, in spite of the efforts of the Christian Church against it. Thus mixed bathing in complete nudity was quite common in Europe nearly up to the Middle Ages, and is still customary in Japan. But even more: it was not considered immoral for beggars to be seen all but naked at the church doors asking for alms; nor that at special celebrations of royalty the king's triumphal procession was led by maidens in the costume of Eve. Indeed, the habit of going naked, as seen among savages, persisted in the more remote districts of Europe much longer than we should expect. Perhaps we have a reminiscence of this state of affairs in the story of Lady Godiva. Her husband had agreed, at her intercession, to relieve the people from their taxes if she undertook to ride naked through the streets. This she bravely did, being covered only by her long hair, while all the inhabitants of the town remained indoors, in accordance with her wishes. In any case, there prevailed a state of utter naturalness between the sexes, as in Ireland, Denmark, Russia, etc., almost up to the eighteenth century. It is only

during the last few centuries that it has become the rule to hide the body completely, any exposure of it being considered a moral offence. But even here women found ways and means of emphasizing or even exaggerating the outlines of the figure. The corset, originally invented for nuns in order to hide and compress the bosom—a female characteristic undesirable in a nun—was soon transformed to serve the very opposite purpose. Farthingales, crinolines, bustles, etc., have the same result of accentuating the female figure. All such artificial means were not, and certainly are not now, considered immodest, though, it seems, we are now returning to a more natural estimate of the body. Thus mixed bathing, so long hotly contested by would-be moralists, has become quite prevalent without at all demoralizing our young people, as was predicted. The young people of both sexes appear in bathing costume without paying much attention to each other, according to the old adage: "Familiarity breeds contempt."

The human body is again becoming a natural object instead of a veiled mystery. Nay, even more, it is not considered essential any longer that women should wear skirts which sweep the ground, in order to cover the ankle. On the contrary, skirts are becoming practical and are made as short as possible; and even the wearing of trousers by women under certain circumstances has come into vogue without any comment.

No wonder, then, that courtship, too, is following the same course and is assuming more natural and less devious forms. Women are showing a more frank and open attitude towards men, and are thus

only following the general line of progress. There is a tendency now towards a greater naturalness in the mutual behaviour of the sexes, based more on the individuality of man and woman than on the old false standards of chivalry, which whilst raising woman upon a pedestal, yet in reality debased her. This spirit is waning, not only in the preliminaries of marriage—courtship—but also in marriage itself.

PART II.—MATING AND MARRIAGE

THE instinct of mating is one of the strongest in human beings, as well as in animals. In fact, it is only second to that of hunger; these two are the most powerful factors in life.

Now courtship, as we have seen, has undergone a long period of evolution, its roots reaching far back to animal conditions. We shall find that marriage follows the same course, and can also be traced back to animal beginnings. First of all, there is purely physical mating in the lowest animal species; then a higher element is gradually added as we ascend the scale of life. Among the higher animals pairing lasts at least for some time after mating. It is, however, in Man that a real spiritual factor comes into play. This gradually leads to a more intimate relation between man and woman, a spiritual bond thus being established which is lacking in animals, and which lies at the root of marriage. Through the ages and with the growth of civilization it has become more and more refined, until our modern ideal of marriage has been developed. Marriage has traversed many roads; it has varied in form with different peoples and changed with different times.

CHAPTER I

MATING

COURTSHIP is only an introduction, a preparation for the more important function of mating. It is the task of courtship to bring the two beings, male and female, into the appropriate state for mating. Mating serves the purpose of reproduction and race propagation. We can distinguish different methods of reproduction, which can be roughly divided into two groups, asexual and sexual reproduction.

In order to be able to follow the modes of reproduction, it is essential to know at least the most elementary biological facts of life. All living organisms are composed of cells. A cell is the smallest organic particle capable of life. There are organisms which consist only of a single cell; these are called unicellular organisms. They form the lowest plants and animals in existence, and are generally of microscopic size. Then there are the multicellular plants and animals (practically the bulk of living organisms around us), which consist of a mass of cells combined into one single body. The various cells assume, in the development of the plant and animal species, different size, shape, structure, and function; each part of the body (as for instance, the skin, bones, muscle, the sense organs, nerves, brain, etc.) being formed by special kinds of cells.*

* See for further details "The Story of Life's Mechanism," by H. W. Conn. London, 1899.

1. Biological Facts.

Since organisms do not live for ever, there exist various devices for reproducing them continuously. Asexual reproduction occurs in one-celled organisms. Its simplest form is that of division. A single cell,

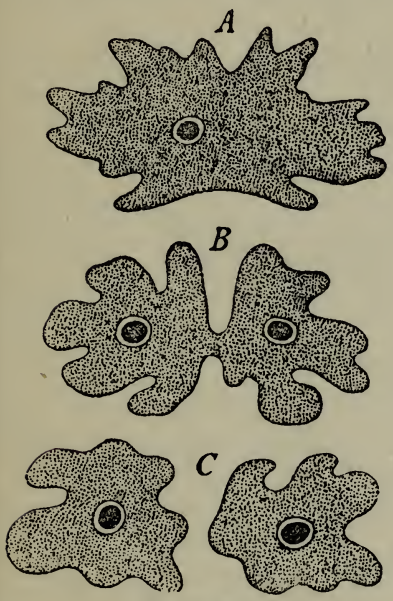


Fig. 23.

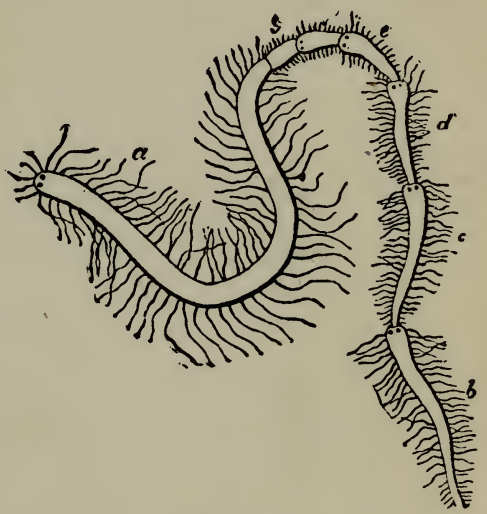


Fig. 24.

Fig. 23.—Division of Amœba.

A, Before division ; *B*, the nucleus divided ; *C*, the daughter amœba.

(From Weismann, "The Evolution Theory.")

Fig. 24.—Division of a Marine Worm (Myrianida). (After Milne-Edwards.)

a, Mother-individual ; *b* to *g*, the daughter-individuals according to their relative ages.

(From Weismann, "The Germ-Plasm.")

having attained a certain size, divides into two daughter cells (Fig. 23). This process can be observed in species as high as the worms (Fig. 24). Another method of reproduction is that of budding.

In the process of growth the body becomes bulged out at a particular point and forms a bud. This bud grows in size, and ultimately separates from the parent body to form a new individual (Figs. 25 and 26). Very often the new individuals do not entirely

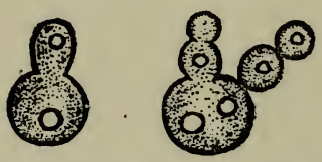


Fig. 25.—Budding of Yeast. (After Prantl.)

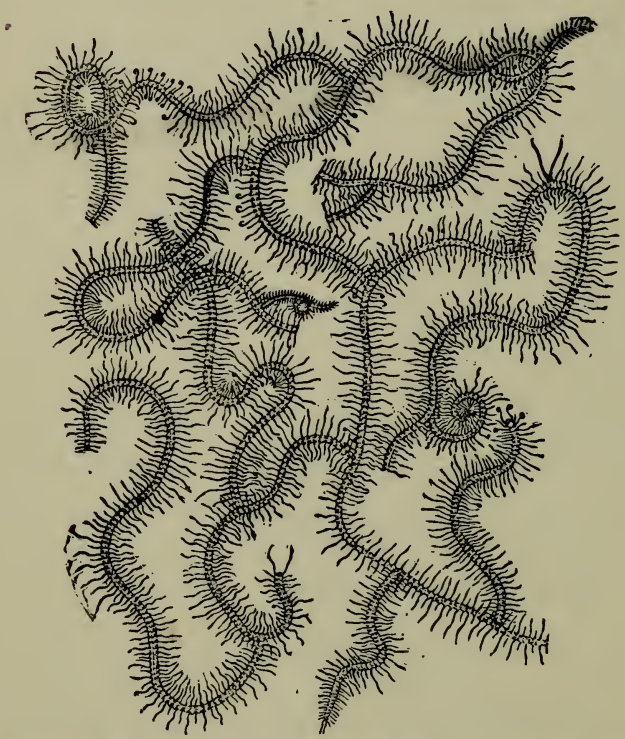


Fig. 26.—Budding of a Marine Worm (*Syllis Ramosa*).
(From Geddes and Thomson, "The Evolution of Sex.")

separate, but remain attached to the parent body, and, budding off anew, form a more or less ramified cell-colony. The sponges and corals are typical examples (Fig. 27).

In sexual reproduction we have the combination of two separate individuals to produce a new one. The simplest way is for the two combined bodies to

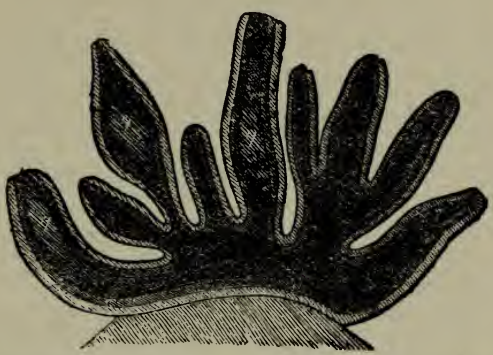


FIG. 27.—BUDDING OF SPONGE COLONY. (After Hæckel.)
(From Geddes and Thomson, "The Evolution of Sex.")

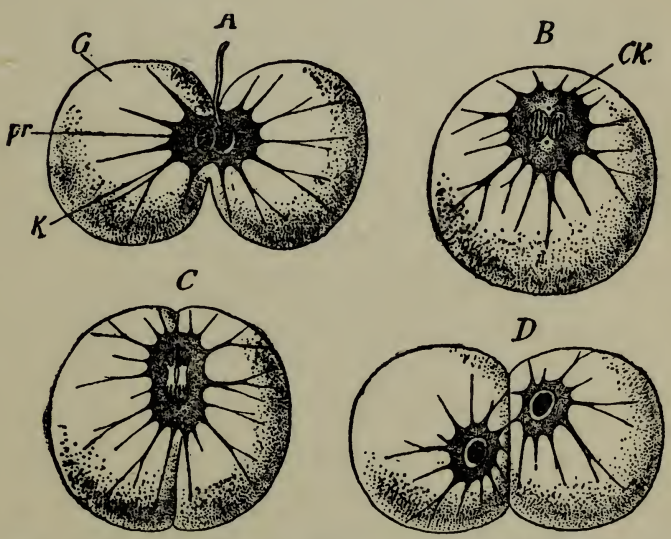


FIG. 28.—CONJUGATION OF NOCTILUCA. (After Ischikawa.)
A, Two individuals coalescing; *B*, fusion of cells; *C*, beginning of division; *D*, completion of division.
(From Weismann, "The Evolution Theory.")

mingle into one, which by dividing in the asexual manner produces two new individuals (Fig. 28). On

the other hand, there are instances where the two combining cells differ in size and shape (Fig. 29). We find a smaller agile one, which is called the male, and a larger more immobile one, called the female. The next stage is to be found in simple multicellular animals forming a cell-colony, where some of the cells become distinct from the other body cells and develop into special cells that are alone capable of repro-

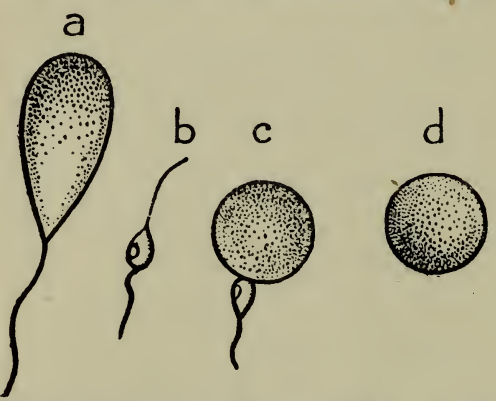


Fig. 29.—Conjugation of Zanardinia. (After Reinke.)
a, Female; *b*, male; *c*, conjugation; *d*, product of conjugation.
(From Delage, "Hérédité.")

ducing the species. These are called the sex cells or germ cells; they develop into the new individuals (Fig. 30).

In the higher forms of reproduction the germs or sex cells are gathered together in special organs called the sex glands. There are two kinds: the male sex gland or testis, producing male germs or sperms (also called spermatozoa); and the female sex gland or ovary, producing egg cells or ova. As a rule, each individual possesses only one kind of sex gland, either male or female, and is accordingly called a male or a female. The higher animals possess two sex glands of the same kind, one at each side of the body.

For the purpose of reproduction in all the higher animals, it becomes necessary that the two kinds of sex cells (male and female) shall be brought together in the process of fertilization in order to produce the new being. In many animal species the separation of the two sexes is, however, not complete, each individual possessing both male and female sex cells. Such individuals are called hermaphrodites (from Hermes and Aphrodite, the Greek god and goddess). But usually a hermaphrodite does not fertilize itself,

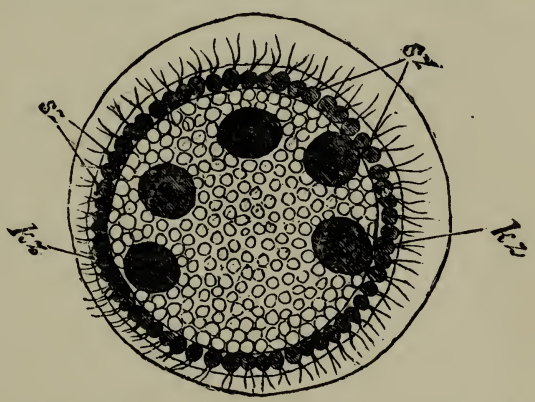


FIG. 30.—VOLVOX MINOR, WITH SEX CELLS. (After Stein.)
sz, Body cells; *kz*, germ cells.
(From Weismann, "The Germ-Plasm.")

but acts either as a male or as a female individual, mating in a proper sexual manner like the sexual organisms.

There exists one exception to the general rule of sexual reproduction in the higher animals. There are some animals whose females have the power of reproduction without needing the help of the males. The males appear only at certain seasons, and then sexual reproduction is possible. In some species, males have never been found. Such reproduction is called parthenogenesis or virgin-reproduction (*par-*

thenos, a virgin); it exists among lower animals, such as plant-lice, bees, etc. With regard to the bee, it is interesting to note that there exist three sexes: male, female, and neuter. The female is the normal fertile individual, and is called the queen, because there is only one to each hive, the other queens that are hatched being killed by her. The queen produces fertile eggs; she is fertilized only once in her life, during her nuptial flight, when the males, or drones, swarm out with her. Only one drone attains the end of mating with her, and dies in that act. On the return to the hive, all the other drones are killed and thrown out. The queen then begins to lay her eggs, which are of two kinds: one kind, fertilized by the sperm of the drone, develops into the neuters or workers, which are really infertile undeveloped females; these do all the work of the hive. The other kind remains unfertilized and develops into drones. Some of the pupæ hatched from the fertilized eggs are fed on special royal diet and develop into fertile queens. Among the ants we find a similar division into three sexes, or even more: fertile females and males, and different kinds of workers.

2. Physiological Facts.

It has already been said that for the purpose of reproduction it is necessary that the two sex cells, the male sperm and the female ovum, be brought together. For this purpose the two individuals (male and female) must meet, in order to bring their germs within reach of each other. This is called copulation. There is no copulation among the lower animals; here everything is left to chance. The discharged

sex cells are brought together in a casual manner, by water-currents, etc., sometimes within, sometimes outside the body. When sufficiently near each other, the germ cells are drawn together by a sort of chemical affinity.

But in the higher animals special precautions are taken for the safe union of the sex cells. The male fish, being attracted to the female, follows her about, and as she lays the eggs he fertilizes them with his sperm. A further step is made in the case of the frog: here the female protrudes her eggs from her body, and the male, embracing her, discharges his sperm on to the eggs as they are laid.

In the highest organisms, however, nothing is left to chance. Special organs are developed for the purpose of close copulation: these are the external sex organs. In the male, the organ of immission (for conveying the sperm into the female passage) is called the penis. It is essentially a long, soft, finger-shaped appendage with a passage running right along it. This passage is connected by a long tube with the testes. While the ovaries in all higher animals, including Man, are situated internally within the abdomen, the testes are external, being contained in a pouch suspended from the pubes. The sperm is formed in the male sex glands or testes. During copulation it passes, mixed with some viscid secretion, out by the penis as semen, and is conveyed into the sex passage of the female. It is evident that for this purpose the male organ must enter the female passage. The introduction of the penis into the vagina takes place during the process of copulation. The discharge of semen into the vagina is called the

ejaculation; the act itself is the sex act (sexual intercourse, coitus, or coition).

The vagina forms a hollow tube, having its aperture just beneath the pubes, and leading backwards and slightly upwards into the womb (or uterus), which is a pear-shaped organ made up almost entirely of thick muscles. It has a relatively small cavity, which is connected with the vagina. In birds the vagina and the external aperture of the bowels (anus) are not separate, both ending together in a common passage which is called the cloaca. In all higher female animals the two passages are separate. In the male the passage of the penis runs into the bladder. Being also connected, as we have seen, with the testicles, it serves the double purpose of voiding the urine and of emitting the sperm during the act of copulation. In the female the urinary passage is separate from the vagina; its opening lies just under the pubes, slightly above the outer aperture of the vagina. The external aperture of the vagina is, in the human female, partly closed by a fine membrane (the hymen) stretched across it; this is generally of semilunar shape, occupying the lower part of the vaginal aperture, thus leaving only a small perforation at the upper end of the vaginal opening. The hymen is generally torn in the first sex act; though it must be pointed out that it may occasionally remain intact even after repeated intercourse. Piercing of the hymen is certainly not absolutely essential for insuring impregnation (that is, fertilization). On the other hand, cases of impregnation have been observed where no immission of the penis took place, since the male germs have active movements of their own, and can enter the vagina by their own mobility.

CHAPTER II

MARRIAGE

MARRIAGE, as distinct from the pairing of animals, is a social institution and has originated with human needs. The human child takes longer than the young animal to attain maturity; its development is slow, so that it needs the care of the parents for a long time, before it is able to fend for itself. The mother's natural function is to see her child safely along the path of life; it thus comes about that mother and offspring are bound together by the needs of the child. To primitive people, the connection between the mother and the child is much more evident and familiar than that between the father and the child, which is not so obvious. Indeed, the physical fact of fatherhood is often unknown. Now the tie which binds a man to his mate and causes him to find sustenance for her and the offspring would also induce him to stay much longer with her when their needs last longer. This would be the first beginnings of true family life.

Marriage has its root in the family. In some tribes a marriage is not recognized until a child is born, and barrenness in a woman has been a legitimate ground for divorce throughout the ages. There have been various stages of marriage, which, accord-

ing to some authorities, all humanity is supposed to have passed through in succession. This, however, is now disputed, and it is thought that tribes which are at one stage need not necessarily have gone through the previous stage. But, on the whole, we can arrange matrimonial institutions into some sort of series, indicating more or less the stages of the evolution of marriage. Sometimes a link may be completely missing, and then, again, we may find two stages overlapping and appearing at the same time in the same tribe.

We can divide marriage into three main types: the matriarchate, the patriarchate, and individual marriage.

1. Matriarchate.

We find more and more signs of the matriarchate as we go down in the scale of civilization, but still there are traces of it even among civilized nations. Matriarchate means the rule of the mother in contradistinction to that of the father, which is so familiar to us. Researches in ancient and modern customs have led to a theory that there was once a period when women had the ruling power in the family. This, however, has been shown to be erroneous. What is true is, that there existed mother-right and not mother-rule. Mother-right imples that descent is reckoned in the female line and inheritance passes through the mother. In some cases the daughters only can inherit from the mother. Under this system the wife remains a member of her own family, and the husband goes to live with her. The children take the mother's name and belong to her kindred. It is her family that protects her and her children, some-

times even against the father; her brother or the nearest male relative is their protector, master, and guardian. Relationship through the father is in some extreme cases not recognized at all, marriage being permissible between children of the same father if they are not of the same mother. The best-known example of such a union between half-brother and half-sister is that of Abraham and Sarah.

There sometimes occurs a transition stage between matriarchate and patriarchate, where the woman goes to live in the man's family or tribe, but the children take her name. Tribes are also found having both phases side by side. Should the man live with the wife's family, descent is reckoned through the female line; but if the man takes the woman to his hut, it is counted through the male line.

Before coming to the discussion of the patriarchate, we must mention group or tribal marriage, which in some respects may be looked upon as an intermediary stage. It has been asserted that it once prevailed generally; but this now finds little acceptance. In group marriage, the man marries a woman and all her sisters, while she is married at the same time to all his brothers. Among the Central Australian natives the tribe is divided into four groups: "There exists for any given group of men a definite group of women with whom they may marry. . . . A man may have one or more women assigned to him as his wives; . . . he will also have others to whom he has access only under certain conditions. . . ." Similarly stands the relation of the women to the men. There are other variations of group marriage which we need not discuss in detail.

We have just seen that certain groups of men are allowed to marry only certain groups of women. Now we frequently find that certain tribes altogether forbid marriages within their own body, only permitting a choice of mates from among other tribes. This is called exogamy, and is supposed to have arisen from the custom of wife-capture, which has ultimately grown into a social law. On the other hand, it is thought that exogamy is due to the desire of preventing intermarriage between near kin, which is considered harmful.

Opposed to exogamy is the custom of endogamy, which enjoins marriage only within the tribe. It generally prevails among more peaceful tribes that have no means of obtaining women outside the clan. We see it, however, restricted to smaller groups within the clan, when it seems to have the purpose of keeping pure the various castes or classes. This system is in vogue in India, where most elaborate and rigid rules exist forbidding marriage outside the caste. In ancient times, there was a barrier to the intermarriage of slave or serf with free man or woman; and the feeling of a class barrier has by no means yet died out completely.

2. Patriarchate.

The patriarchate is the earliest marriage system of which we have definite authentic records in the history of the nations. Thus it is found to have existed among all the ancient peoples that have been the precursors of modern civilization. We need only mention the patriarchs of the Bible. The patriarchate implies, in the first instance, the appropriation

of the woman and the children by the man. Once he has taken her away from her own family, she is no longer under its protection, but becomes completely his possession, to be treated as he likes. She is at his mercy as to life and limb, and he can at times even dispose of her, if he so wishes, by either selling her or giving her away. This often also implied the right of lending her to an honoured guest. The custom of selling a wife prevailed in England, for instance, up to late times; Thomas Hardy uses it as a theme in one of his novels, " The Mayor of Casterbridge." In patriarchal society descent and inheritance go through the male line, and not, as under the matriarchate, through the female. The father also has supreme power over his children, and can give them away in marriage as he pleases. The ancient Hebrews gave the father great rights over the family: not only could he dispose of his daughters according to his pleasure, but he could also choose wives for his sons. Among the Romans in the earliest times, the father (called *pater familias*, father of the family) had the power of life and death over his dependants. The patriarchal Roman family consisted of the eldest male and all descendants in the male line only. " None of the descendants of a female were included in the primitive notion of family relationship. The father could give a wife to his son, or give his daughter in marriage," and he could sell his children. A woman came legally under the tutelage of her husband, as if she were his daughter. The ancient Greek pater familias could not exert quite so much power over his family, but a Greek woman could be given in marriage by her father to

a man she did not know at all; and she remained in a state of nonage throughout life. She was either under the authority of the father or guardian, or, if she married, under that of her husband. She also, like the Roman wife, had to give up worshipping her family's household gods and had to worship the gods of her husband, as soon as she entered his home.

Although among many races the father's authority has declined a good deal, there is still left to him the power of betrothing or marrying his children whenever and to whomsoever he chooses. Thus we find that in Japan and many other places the marriage is nearly always arranged by the father. Nay, more, children are betrothed and married at a very early age—as, for instance, in India. There even exists in many countries the custom of betrothing children before or immediately after birth, as in Australia, New Guinea, New Zealand, etc. Amongst the Eskimos, as soon as a girl is born the young lad who wishes her for his wife goes to her father and proffers himself.

An example of man's authority and woman's meek submission exists, or has existed until lately, in Russia. A Russian peasant woman thinks her husband does not love her until he has shown it by giving her a beating; otherwise she thinks he shows lack of interest in her. On her wedding day a Russian bride gives (or, at least, gave until quite recently) her husband an elaborately decorated whip, which he lays about her shoulders—gently, of course! Whilst doing so he says: "I love thee as my soul, and I beat thee as my serf. I am thy master; thou

art to obey me." This seems to be only a symbolical act now, but most likely it is based on old custom.

It is well known from Bible history that the patriarchs had more than one wife. No exception was taken to this at that period. We need only quote Abraham, whose wives were Sarah and Hagar; Jacob with his two wives, Leah and Rachel; King David; and Solomon with his reputed thousand wives and concubines.

The union of one man with more than one woman is called polygamy. We find it existing both in olden times and at the present day; it still prevails in all parts of the world, chiefly among Mohammedans and less advanced nations. It has died out among Western civilized people, with the exception of the Mormons, whose religion, it is said, imposes upon them polygamy as a divine duty. Royalty forms another exception. Members of royal houses even now sometimes allow themselves the privilege of two wives. In addition to the legitimate wife of royal blood, a second marriage is allowed with a woman of less noble descent. Such a marriage is called a morganatic marriage, and the morganatic wife and her offspring have not the rights of royalty.

Polygamy is perfectly legal and moral with the people among whom it exists, though in practice it is not always carried out, simply because there are not always enough women to allow each man more than one wife. Often it is only the headman or chief of a clan that has the privilege of taking more than one wife, while his tribesmen are restricted to one. Then, again, not every man can afford to keep many wives, so that it comes to be looked upon as a

mark of wealth and power, and insures a good social position. Livingstone relates of the Makalolo women: "On hearing that a man in England could only marry one wife, several ladies exclaimed that they would not like to live in such a country; they could not imagine how English ladies could relish this custom; for in their way of thinking every man of respectability should have a number of wives as a proof of his wealth. Similar ideas prevail all down the Zambesi." Examples are even found where the first wife will entreat her husband to take another wife, to lighten her burden, as woman's toil is very heavy among savages, and the addition of another wife will divide the work.

The number of wives a man is legally permitted to have varies among different people. The King of Loango is said to have seven thousand wives! In some instances the wives take equal rank, as in the case of Leah and Rachel; but there are many types of polygamy where there is one chief wife, the others taking an inferior position. Thus, in China there is only one chief wife; the others are secondary, though legitimate, wives. In Mohammedan countries, where a man has two or more wives, the one married first generally takes the highest rank and is called "the great lady." The chief or first wife among negro people generally has command over all the house and the rest of the wives. In many cases the children of the first wife have precedence over the other children as regards inheritance and other privileges.

A much rarer form of marriage is polyandry, the union of one woman with more than one man. This occurs, for instance, in group marriage, mentioned

before. Very often the woman marries a man and all his brothers, the children being attributed to the eldest husband. In polyandrous marriages the first husband is, as a rule, the chief one, the second husband being inferior and sometimes having to serve the first. This custom seems to have existed, according to Cæsar, in Ancient Britain; the children were considered as belonging to the man who first took the girl to wife. In Tibet the elder brother has the right to choose the wife; and the marriage contract can include all his brothers, if they wish to avail themselves of this right. The children call the elder husband father, the younger husbands uncle. Polyandry often exists together with some other form of marriage.

MARRIAGE WAYS.

The modes of procuring a wife are manifold. We can divide them roughly into three classes: marriage by capture, by purchase, and by free consent of the parties. The practice of capturing wives has always existed, and still prevails in many parts of the world. Traces are to be found in the marriage ceremonies of many races, and it has in consequence been asserted that all humanity has once passed through this stage. This, however, is now doubted, some of the customs being rather interpreted as symbolical of the shyness and reluctance of the bride in going to a strange man, a reluctance which has to be overcome by the bridegroom. Peaceful arrangements of marriage contracts must always have existed, even side by side with the capture of women.

As a rule, primitive people are very warlike, and

women have always been considered legitimate spoils of war. Generally, where the vanquished men are all slaughtered, the women are spared and carried off by the victors. Thus it comes about that a brave warrior will obtain many wives; in fact, the possession of many wives is a source of pride, being proof of a man's valour, or, as in the cases previously mentioned, a sign of his wealth.

The Bible repeatedly speaks of the process of obtaining wives by capture. Instances of this custom are also known of ancient Rome—as, for example, in the story of the rape of the Sabine women. Marriage by capture was also customary among the ancient Greeks, and the custom was retained by the Spartans as an important symbol in the marriage ceremony. There is a well-known story of Andromache, wife of Hector of Troy, who was taken captive by the Greeks and assigned to Pyrrhus, Achilles' son. Abundant evidence of wife-capture is to be found in the European races. It existed among the ancient Germans and Scandinavians, while among the South Slavonians it was in force even as late as the beginning of the last century.

It is not only in times of war that capture of women takes place; men make marauding expeditions for wives also at other times. Among the Maoris, the old way of obtaining a wife was for the man to gather together a party of his friends, and to abduct the woman by force or stratagem. In Serbia it was the custom to lie in wait for a girl of a neighbouring village, and to carry her off as she went out to tend her flock; or sometimes an armed assault was made on her home.

Marriage by capture may exist together with more peaceful methods of obtaining a wife. Among the Macas Indians, a wife, when of the same tribe as her husband, was acquired by purchase; women of another tribe by force.

Symbolical wife-capture occurs very frequently in marriage ceremonies, but does not always indicate a survival of real capture. "The Araucanians, for instance, consider the carrying off of the bride by pretended violence as an essential prerequisite to the nuptials, and, according to Mr. E. R. Smith, it is even 'a point of honour' with the bride to resist and struggle, however willing she may be." In Wakamba, marriage goes by purchase, but the bridegroom must carry off the bride in some way or other. "Among the Bedouins of Sinai, the bridegroom seizes the woman, whom he has legally purchased, drags her out of her father's tent, lifts her, violently struggling, upon his camel, holds her fast while he bears her away, and finally pulls her forcibly into his house, though her powerful resistance may be the occasion of serious wounds." Among the Mosquito Indians, after the wedding is arranged and the presents paid, the bridegroom seizes his bride and carries her off, followed by her relatives, who pretend to try to rescue her. In ancient Rome, the bride fled to her mother's lap, but was forcibly carried off by the bridegroom and his friends. This seems to have been less a symbol of capture than of the reluctance of the bride to leave her home and go to a strange man. In Wales, on the morning of the wedding-day the bridegroom, accompanied by his friends on horseback, carried off

the bride. In Ireland, so late as the middle of the last century, the bridegroom was compelled in honour to run off with his bride, even when there was no need. The custom of lifting the bride over the threshold of her husband's home, which occurs in various places, is put down to a survival of wife-capture.

There is frequently a simulated flight by the bride, who must be captured by the bridegroom. In Arabia, among the Mezeyn Arabs, the bride really escapes and hides herself in some mountain fastness previously well stocked with food. Here the man that wants to marry her must find her. In Brittany, the bridegroom goes to the bride's house, which he finds locked and barred; sometimes he has to knock for hours before anyone opens the door. Then he is asked what he wants. He replies that he has come for the bride; the father goes in and brings first the grandmother. When told that she is not the desired one he returns and brings the baby, or the sisters one after the other; and ultimately brings the bride, who has been hiding indoors all the time.

The custom of simulated flight sometimes changes to real flight when a girl is unwilling to accept a man. Among the Kalmucks, after the marriage price is arranged, the bride runs away on horseback, the lover pursuing. If she is partial to him, she is soon overtaken; but there is no instance of a Kalmuck girl being caught if she does not care for her pursuer. In the Malay Peninsula, there are various methods of chasing the bride, and here also it is only the willing maid that can be caught. In one tribe the lover must swim for his wife; in another, the chase takes place in canoes, the bride being given the fleeter canoe and

a good start. Again, a marriage dance may be held, during which the bride breaks away, running her swiftest, the bridegroom following her. If he cannot catch her and bring her back before that part of the dance is ended, she need not marry him, nor need she return the purchase-money.

Capture is by no means the regular manner of obtaining a wife. In many tribes it is considered illegal and immoral. Wife-capture, real or pretended, is very often found side by side with wife-purchase, which is customary among more advanced peoples and is much more prevalent all over the world. We can divide purchase under three heads: exchange; service rendered to the parents or guardians of the bride; and payment in kind for the bride, which is in time modified to an exchanging of gifts and ultimately to the bestowal of a dowry upon the bride.

" The simplest way of obtaining a wife is no doubt to give a kinswoman in exchange for her," says Westermarck. " The Australian male almost invariably obtains his wife or wives either as the survivor of a married brother or in exchange for his sisters or, later in life, for his daughters. A similar exchange is sometimes effected in Sumatra."

Marriage by service is a more general custom than exchange. Here the bridegroom has to earn the bride by serving her father or guardian. The terms and years of service differ with the various peoples. Sometimes the bride is given to the man in advance; at others only after service has been rendered. This custom still prevails among uncivilized races. A well-known ancient example is that of Jacob, who served Laban seven years for Rachel, but was given

Leah instead, and had to serve another seven for Rachel; she was, however, given to him in advance. In some cases it is only when the man cannot pay for his bride that he has to serve for her; but there are tribes among whom no payment can replace service. It is generally the first wife that is obtained in this manner; the others are purchased. This form of marriage occurs also simultaneously with marriage by purchase.

The custom of purchasing a wife exists, or has existed, among many peoples in various stages of progress. Usually the amount to be paid is arranged between the parties, but sometimes it is established by custom. The price varies in many ways. Often it is considered to be payment to the parents for the girl's services and the cost of her upbringing. The beauty and health of a girl comes into consideration, as does also her social rank. In British Columbia and Vancouver the value of the articles given for a bride ranges from twenty to forty pound sterling. From two to thirty cows will buy a wife among the Kaffirs. In Uganda the price is either three to four bullocks, six sewing-needles, or a small box of percussion-caps. The chief Maino in the Torres Straits told Dr. Haddon that he paid for his wife "a camphor-wood chest, with seven bolts of calico, one dozen shirts, one dozen singlets, one dozen trousers, one dozen handkerchiefs, two dozen tomahawks, one dozen hooks, two fish-lines, one long fish-spear, one pound of tobacco, two pearl shells, and 'by golly he too dear!'" At the beginning of the last century the high purchase price for a bride in Serbia made it impossible for many a poor fellow to marry at all. In addition

to paying the purchase price, the bridegroom was expected to bestow expensive presents on the bride, her mother and all her near relatives. This caused the enactment of a law in 1849 restricting the price of a bride to one ducat, which had to be paid before the wedding.

Custom varies as to the time of payment. Sometimes the full price must be given before the marriage, but then, again, it may be paid in instalments. In the latter case, the bride usually remains in her father's home, the husband not gaining complete ownership until the full price is paid. Among some people where purchase prevails, it is considered a disgrace to the family to give away a girl without a price—it is as if she were of no value.

The custom of paying for a wife existed in ancient Greece. In the Homeric age a maid is described as "one who yields to her parents many oxen as presents from her suitor." There are also indications that there was wife-purchase in ancient Rome. In ancient Babylon girls of marriageable age repaired to a certain place where the young men assembled; here the girls were sold by the public crier. The most beautiful one was sold first; part of the money derived from the sale was given as a dowry to the ugliest, who was sold next. This money gave her a chance of getting a husband, which she would not otherwise have had. The girl next in beauty was then sold, and after her an ugly one again received part of the money from the sale; until in this manner all the girls were disposed of. A maiden-market existed until not long ago in Roumania. Very often capture and purchase are found to apply together. Thus, for

instance, a man abducts or elopes with a girl without her guardian's consent; but he has to pay for the girl on returning. Generally, if the woman does not fulfil her compact, the man may return her and demand the purchase-price again.

As more elevated ideas arise among civilized people regarding the dignity and value of woman, marriage by purchase falls into disrepute. The purchase-price becomes lower and lower, and in many cases takes the form of wedding-gifts, the value of which is prescribed by custom. In Japan, the bride must give presents to the bridegroom, to his parents, and to his relatives, in the choice of which she is guided by the value of those given by the bridegroom. The bridegroom also sends the bride a betrothal gift, the "complimentary girdle." Its acceptance seals the contract; bride and relatives are in honour bound not to draw back. The girdle has the same significance as the wedding-ring. In China, there is an interchange of presents between the guardians of the bride and those of the bridegroom. The presents given by the father to the bridegroom in time increased in value. With some peoples, again, a part or the whole of the purchase-money goes to the bride instead of to the father, and becomes her marriage portion. Either the father passes it on to her or it is given to her directly by the bridegroom. This was called the *morgengabe* (morning gift), as it was presented to her on the morning after the wedding. The next step is a sort of combination of the two methods. The father, instead of giving the present to the bridegroom, now gives it to his daughter as a dowry. This may be regarded as a contribution

by the wife to the expenses of the joint household; or it may be intended as a settlement for the wife in case the marriage is dissolved by the husband's death or otherwise. The dowry generally becomes the husband's property, and in case of divorce must be returned to the wife. In China, the bridegroom does not see his wife until after the wedding; and he may send her back to her parents if he is not satisfied with her. But he must not dismiss her without giving her a sum equal to her dower, and must also pay to her parents all the expenses of the marriage. In many cases it is arranged that the dowry is completely at the wife's disposal; this is becoming more and more frequent with the modern advance in woman's independence in all spheres of life.

3. Monogamy.

There is no doubt that we find monogamy among a number of primitive peoples, but the fact remains that almost all nations of historical importance have passed through a polygamous stage and have attained monogamy only gradually. How this happened has never been explained quite satisfactorily; most probably various causes conspired to bring about the change.

As the fighting spirit abated somewhat and war became less prevalent among tribes, fewer men would be killed, and this would lead to a more equalized proportion between men and women. It would hence be more difficult for any given man to obtain more than one wife. Besides, when a man had to purchase his wife he would frequently be unable to afford more than one. Another factor working in

the same direction lies in the circumstance that men who did not fight were occupied more and more with industry, thus releasing women for the home and making family life more intensive, and this in its turn would tend to attach the man more firmly to his wife and children. Furthermore, it was the woman's interest to see that her children had full rights. This would militate against the keeping of additional wives or concubines. The result was that the favourite wife finally became the only one.

Another advance in monogamy was made in the direction of woman's freedom to choose her own husband. At first her guardians could sell her without her consent. After a time she was still given away by her father or guardian, though her consent to the contract was necessary. The final change came about when the bride could dispose of herself.

Monogamy has become the recognized form of marriage in all countries of Western civilization, and certainly has proved successful from a social point of view, both as regards the relationship of husband and wife and that of parents and children.

MARRIAGE RITES.

Many rites and ceremonies are connected with the various kinds of marriage. Some are only symbolical of bygone customs; others, again, embody beliefs and superstitions still existing. As has been mentioned in a previous chapter, sex and its manifestations have very often been looked upon with fear and awe as uncanny and attended with many dangers. As Crawley says in his "Mystic Rose": "Ceremonies of marriage are intended to neutralize the dangers of

sex, and to make the union safe, prosperous, and happy.

There was no marriage ceremony among primitive folk, and this is still the case with many uncivilized and semicivilized peoples, such as the Eskimos, Tasmanians, Solomon Islanders, and others. As the importance of marriage became recognized, certain ceremonies, which generally had a tribal and religious meaning, were performed on the occasion. Since the bride was to be adopted into the family of her husband, a blood-relationship was established symbolically by the bride and bridegroom, each letting blood and smearing the other with it. At times red lead or red powder replaces blood for this purpose.

Very commonly the only ceremony is a feast, which lasts many days. The fact that the bride and bridegroom have eaten together is in some instances considered to be the most important part of the whole of the ceremony. This signifies the union, the living together of the couple, whereby the bride comes under the subjection of the husband. In Burmah the bride and groom eat hot rice out of a new bowl; as they eat, some witness cries, "It is done!" and they are man and wife. In some Brazilian tribes, marriage is contracted by the man and woman drinking together. In Scandinavia, the couple used to drink out of one beaker; this still occurs in Russia. The ancient Greeks and Romans had a sacred marriage ceremony which consisted in eating a cake of wheaten flour together in front of the husband's household gods.

The union of husband and wife is indicated by various other symbolical means. Among some tribes,

the little finger of the man's right hand is tied to the little finger of the woman's left hand. Again, the couple about to be married merely sit together on one seat and receive their friends, to whom they give a dinner or feast. Among the Veddahs of Ceylon, the bride ties a thin cord round the bridegroom's waist, and they are then husband and wife. The Hindu bride and bridegroom have their hands bound together with grass. All these customs probably account for the phrases "the nuptial tie" or "the knot tied." A quaint method of indicating the union of the couple exists in Japan. Here, when the bride crosses the threshold of her new home, the wicks of two candles are tied or twisted together by some near relative of the bridegroom, and are lit. This symbolizes the union of bodies and souls in marriage.

The religious aspect of marriage first finds expression in magical rites. Crawley points out the prevalent belief that spirits seem particularly active at marriages, so that precautions must be taken to drive them away. In Russia all doors and windows, and even the chimneys, are closed at a wedding, to prevent malicious witches from hurting bride and bridegroom. The practice of throwing rice at a wedding originated in the custom of giving food to the spirits in order to propitiate them. In the county of Durham and in Cleveland, guns were fired over the heads of the newly wedded pair all the way from church, to ward off the evil spirits. There still exists in Germany the institution of *Polterabend*, when people break pottery outside the bride's house on the eve of the wedding.

Weddings are very often arranged to take place at night in order to run less risk of danger from evil spirits. Attempts are also made at hiding the identity of bride and bridegroom by their pretending to be queen and king for the day, or by their wearing entirely new clothing. Sometimes a mock bride is at first substituted for the real one. An interesting custom exists of first marrying one or both of the pair to a tree. This insures the harmlessness and success of the real ceremony. The bride and bridegroom are sometimes attended by one or more persons dressed up to resemble them. This custom is based on the belief that there is safety in numbers; from this has arisen our modern institution of bridesmaids and groomsmen.

Just as there are customs which aim at warding off ill-luck, so there are other customs which have the purpose of bringing good luck. Thus red is worn as a lucky colour by Orientals and semi-Orientals. In the Black Forest the bride weeps all the way from church, since she that weeps enough on her way to her new home will never weep in it.

Coming to marriage customs nearer home, we have already mentioned that the religious ceremony of the Romans consisted in eating the sacred cake together. In addition to this, there was a secular form of marriage by purchase (*coemptio*), where the ceremony of formal purchase was gone through; this was sufficient to constitute marriage. Similarly, in early Europe, among the old English and other Teutonic people, marriage was a private transaction, being a formal sale of the bride by the father. There was yet a third form of Roman marriage, in which the

mere living together of the couple continuously for a whole year, without any formality whatsoever, was considered to constitute marriage. This kind of marriage—the mere living together—though in complete contrast to the customary ceremonial or legal marriage, found recognition throughout the Middle Ages, and is said, according to law, to be valid even now! Such marriages are, however, the outstanding exceptions. There is generally at least a minimum of ceremony—a simple oral declaration, which is characteristic of Scotch law.

With the growing power of the Christian Church, secular marriage was gradually replaced by the religious ceremony or sacrament. At first only the presence of the priest was considered necessary; but ultimately no marriage was valid unless consecrated by the Church. We need not go into details about the actual religious ceremonial and its inner meaning, but would only point out certain customs which are survivals from earlier times. The ring, for instance, is said to be a symbol of purchase of the bride. It is put on the third finger of her left hand, because it was believed that there was a vein leading from that finger right to the heart. The bride generally appears at the wedding in white, with a veil over her face and a wreath of orange-blossom or myrtle on her head. The bride's white dress was already in vogue in ancient Greece and Rome; it is supposed to signify holiness, as white was worn by the priest during the ritual sacrifices. Various explanations of the wearing of the veil have been given. In Korea and many other places in the East, the bride's eyelids are glued together so that she may not see the

FIG. 31.—A NORWEGIAN BRIDE.

(From a picture by Nico Jungman.)

FIG. 32.—WOMAN OF SUMATRA IN BRIDAL DRESS.

(From "Das Weib in Natur und Völkerkunde," by H. Ploss.)

bridegroom until the ceremony is over. In Morocco the bride has to keep her eyes closed until after the ceremony, and she also wears a veil over the face. Among the Jews the bridegroom was forbidden to visit or see his bride until after the wedding. Crawley attributes the origin of the bridal veil to the aversion of primitive people to seeing dangerous things; and bride and bridegroom were considered taboo because they were dangerous to each other until after the marriage ceremony. Others, again, explain the bridal veil as a token of sexual shyness and the timidity of the bride. Wreaths were originally worn by the priest during the sacrificial rites, and so became symbolical of holiness. The bride wears one at the ceremony because marriage is considered a sacrament. Later on, with the insistence Christianity laid upon purity, the wreath became the emblem of virginity in the bride, only virgins being allowed to wear it. A similar idea is implied in the custom we find in Norway and other places, where a nuptial crown is worn by virgin brides (Fig. 31). These are hired from the Church and worn by the bride on her wedding-day. The " best man " is a reminiscence of the times when he was the chief abettor in the procuring of the bride.

Of late, secular marriage had been instituted once more in all advanced countries, giving people the option of either religious consecration or civil registration. In fact, there is a tendency to make marriage more and more a mutual agreement between the parties entering matrimony, based upon true understanding and love.

PART III.—PARENTHOOD

JUST as courtship is only a prelude to the more important function of mating, so we have seen that mating leads to pairing and marriage. All these processes form, as it were, a series of events which have the ultimate purpose of procreation. The usual idea is, that the body is the bearer of the germ cell, and so of the future generation. In the modern scientific view, however, it is more correct to treat the germ cells as the all-important factor. They continue the race in a successive line, while the body is merely a repository of the germ cells, being only "something temporary and non-essential, destined merely to carry for a time and nurse the more important germs of the future generations." Now we find that with the progressive development of animal organization the care of the germ cells extends even beyond the time when they are hatched—that is, when the young have been born; and, furthermore, the time devoted to rearing the young becomes longer and longer with the advance in the animal series, until we reach Man. Here a whole social system has arisen especially for the upbringing and fostering of children. This is being constantly extended as the importance of childhood becomes more and more appreciated for the full realization of manhood and womanhood; for, as Wordsworth has said: "The child is father to the man."

CHAPTER I

REPRODUCTION

1. Reproduction in Animals.

We have seen in the previous chapter that the male and female germ cells are brought together in the act of mating. It has also been pointed out that in individuals of bisexual species (those having both

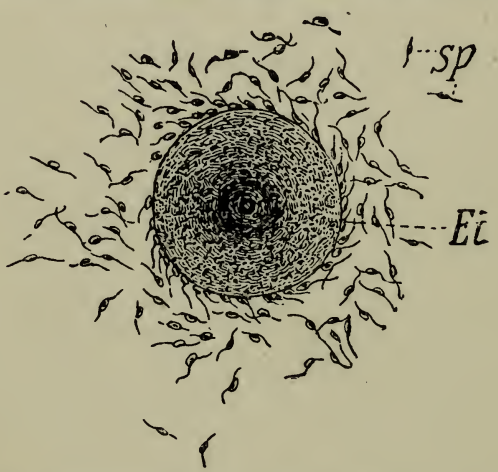


Fig. 33.—Ovum, surrounded by Sperm Cells. (After Schenck.)
Ei, Ovum ; *Sp*, sperm cells.
(From Weismann, "The Evolution Theory.")

males and females) the male and female germs must combine in order to produce the new being. This mingling of the two germs is called fertilization in the higher animals; also known as conception. As a rule it is the small active sperm that penetrates

the larger, relatively immobile ovum in order to bring about the mingling of the two substances (Figs. 33 and 34). Once the mixing of the two germ cells has taken place, development starts by a process of cell division. The mother cell—as the combined male and female germ is now called—divides first into two daughter cells (Fig. 35); these again divide, each into two, so that we have four granddaughter cells; then by further division we get eight cells, sixteen, thirty-two, and so on, until a solid ball of cells is formed, in

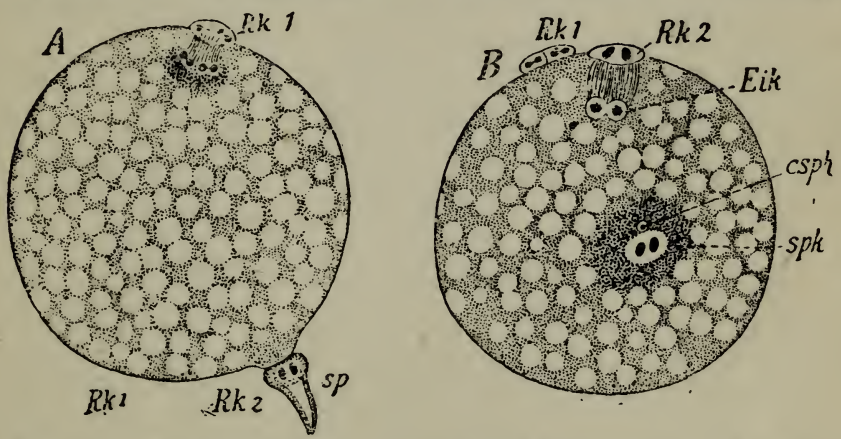


FIG. 34.—FERTILIZATION IN *Ascaris Megalocephala.* (Adapted from Boveri and Van Beneden.)

A, Spermatozoon (*sp*) about to penetrate ovum, which has one polar body (*Rk 1*); *B*, spermatozoon (*spk*) has entered ovum, which shows ovum-nucleus (*Eik*); also three polar bodies (*Rk 1* and *Rk 2*).

(From Weismann, "The Evolution Theory.")

appearance very much like a mulberry and therefore called a morula. This morula undergoes further change. Its central cells liquefy, so that instead of a solid ball there is now a single layer of cells, which encloses a hollow space filled with fluid. This is called a blastula. The blastula then doubles upon itself by growth, the differently situated cells dividing

at different rates, so that at the end a structure arises very much like an indiarubber ball completely bulged in. It forms a double hemisphere of cells called the gastrula, and consists of an outer layer and an inner

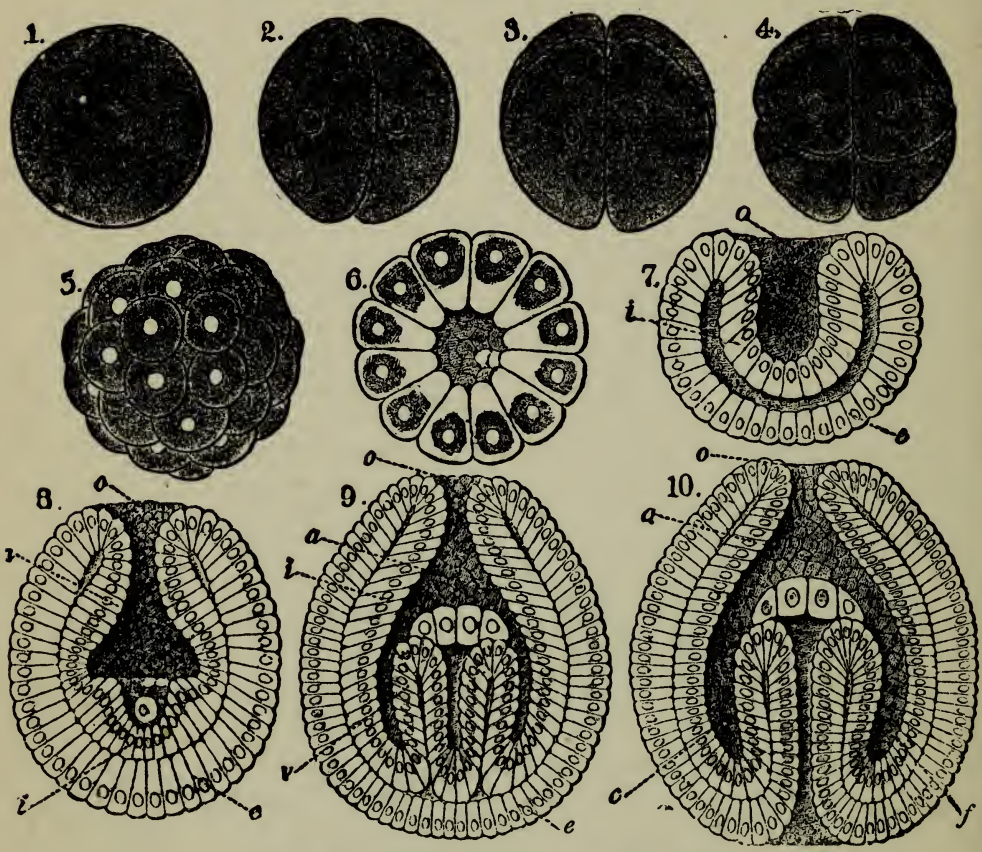


FIG. 35.—EMBRYOGENY OF SAGITTA.

1 to 4, Primitive mother-cell with successive divisions; 5, morula; 6, blastula; 7 and 8, gastrula; 9 and 10, cœlomula; *e*, outer layer; *i*, inner layer; *o*, primitive mouth; *a*, primitive mouth- or gut-cavity; *v*, cœlom folds; *c*, cœlom cavity.

(From "Natural History of Creation," by E. Hæckel. By kind permission of the Author and Publisher.)

layer of cells. This double layer of cells encloses a cavity which opens outwardly. The next stage consists in an elongation of the gastrula into horse-

shoe shape. The further process of development is too complicated to be given here in detail. All that is necessary to point out is the fact that the original mouth cavity is divided once more. Two folds (the cœlom folds) grow from the back of the gastrula into the primitive mouth cavity, dividing it into two side or cœlom cavities and one central narrow cavity. The two side cavities ultimately become the combined chest and abdominal cavities, right and left; while the narrow central part forms, later on, the gut. By a process of further growth and foldings we finally get all the different structures and organs of the body. It will be seen that the organism passes during these stages through a number of forms quite unlike its mature state; in this stage it is called the embryo. It has been seen that the embryo develops by division from the original mother cell. Some ova are provided for this purpose with a special nourishing substance, the yolk, which in certain cases reaches enormous proportions, the actual mother cell, here called the germinal vesicle, being only microscopical (Fig. 36).

Among the lower animals the fertilized eggs are hatched outside the body, and, as explained above, undergo a number of embryonic changes. In certain species, such as crabs, insects, amphibians, the embryonic stages are very distinct from each other; the embryos are able to shift for themselves and behave to a certain extent like adult animals. In these cases the development of the embryo is spoken of as its metamorphosis. To take the case of insects: here the female lays her fertilized eggs on to some plant, or (it may be) animal matter, to which they are sometimes attached by some adhesive covering.

These eggs first hatch into grubs or, in butterflies and moths, into caterpillars (Fig. 37). The caterpillar feeds and grows, casting its skin repeatedly. Before the last moult, the caterpillar ceases to feed and wanders about seeking a suitable place to settle on, before it enters the next stage of the metamorphosis. Some caterpillars suspend themselves to a branch of a tree by a thread of silk which they have spun; others

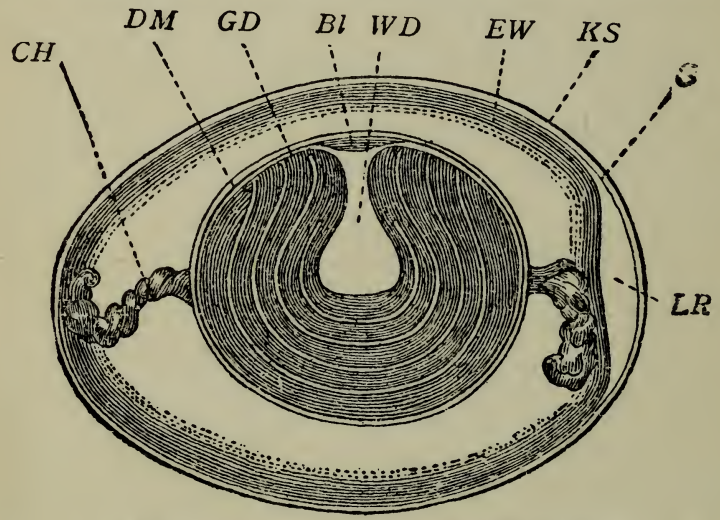
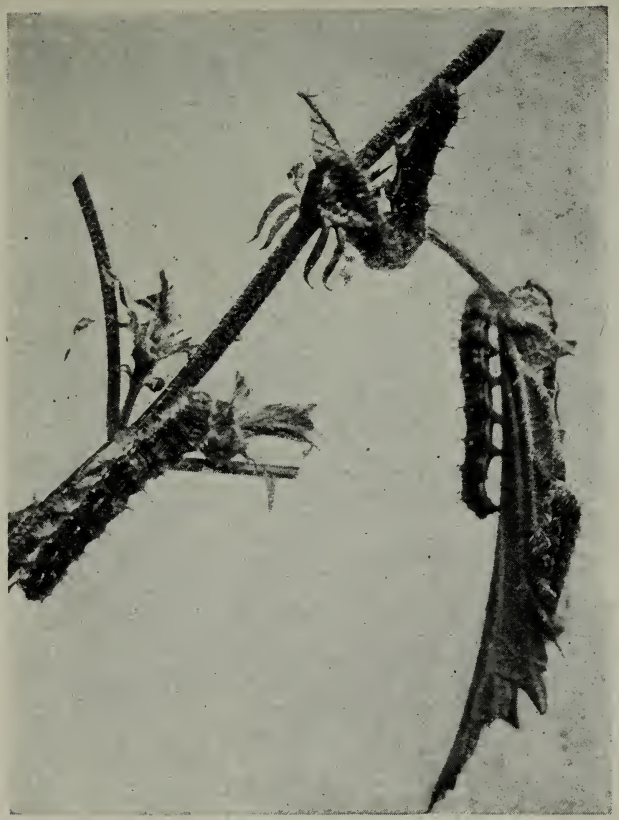


Fig. 36.—Hen's Egg : Diagrammatical Longitudinal Section. (After Allen Thomsen.)

CH, Chalaza; *DM,* vitelline membrane; *GD,* yellow yolk; *Bl,* germinal disc with germinal vesicle; *WD,* white yolk; *EW,* albumen; *KS,* shell; *S,* shell membrane; *LR,* air chamber.

(From Weismann, "The Evolution Theory.")

spin a cocoon of silk in which they are enclosed (Fig. 38), whilst others, again, descend to the ground, scoop out a dry burrow, and then go to sleep. Then the last moult takes place; beneath the caterpillar's skin a horny shell is formed, and as soon as this is complete, the outer skin is cast off; and we have the pupa or chrysalis. The chrysalis is motionless and



Caterpillars.

Chrysalis and Butterfly.

Fig. 37.—Metamorphosis of a Butterfly (Painted Lady).

(From photographs by J. J. Ward, F.E.S., Coventry.)

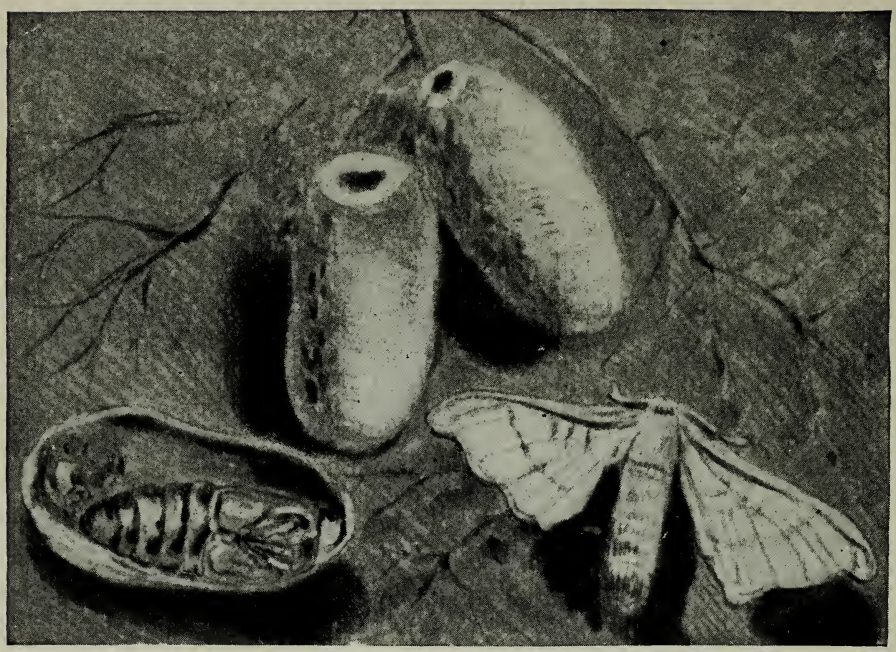


FIG. 38.—COCOONS, CHRYSALIS, AND MOTH OF SILKWORM.
One cocoon is opened to show the chrysalis.

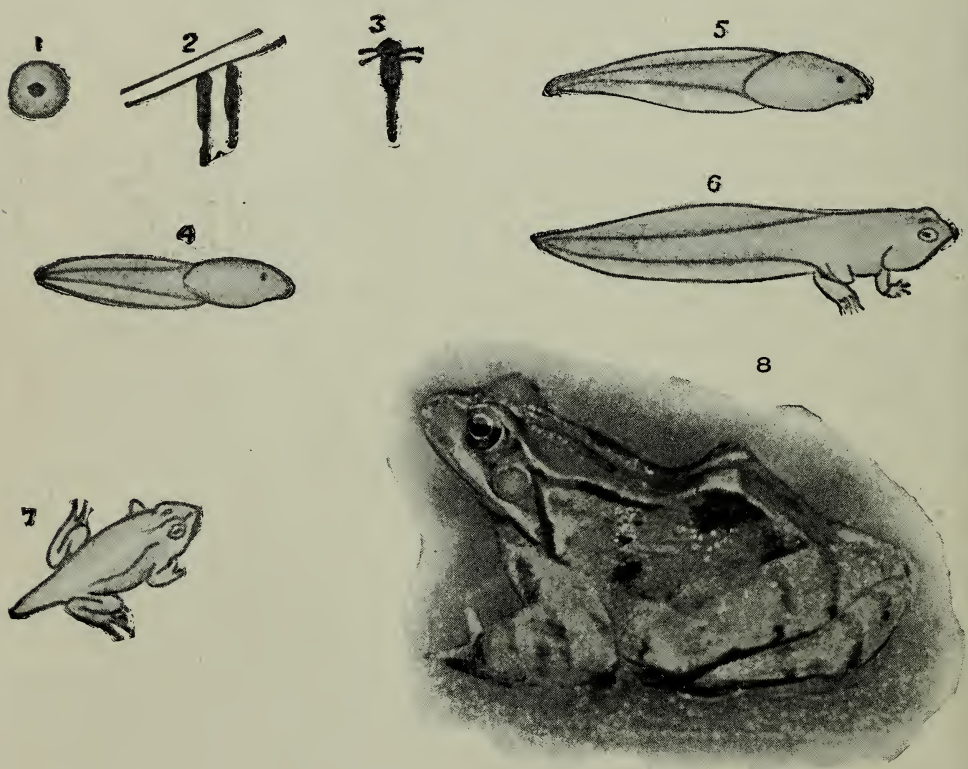


Photo by W. B. Johnson

FIG. 39.—STAGES IN THE DEVELOPMENT OF THE FROG.
1 Shows the egg ; 2 and 3 the larval, and 4 to 7 the tadpole stages ; 8 is the adult stage.

(From "The Infancy of Animals," by W. P. Pycraft.)

does not feed, but it changes imperceptibly under the cocoon into the adult stage, be it a beetle, butterfly, moth, or other winged insect.

We can pass over the embryonic development in the next classes of animals, as they show no special features to be recorded here. It is only when we come to the frog that we find once more an interesting case of metamorphosis. The frog deposits the fertilized eggs, commonly called spawn, in large masses in ponds and ditches. The spawn, together with the yolk on which the young embryo feeds, is enveloped in a gelatinous outer covering, which serves as a protection against danger. In about a week the egg hatches out as a fish-like creature with head and body all in one, and a long tail which is adapted for swimming (Fig. 39). Little tufts of gills, which serve for breathing, branch out at each side of the head. It has now become a larva, which actively seeks its food in the water, devouring almost any kind of animal or vegetable matter. Soon internal gills are formed, and as they develop the external gills decline. The tadpole stage now follows. By much feeding the body has become large and round, and the tail has greatly increased in size. At the base of the tail two legs have begun to bud out, while the two fore-limbs, which are hidden within the gill chamber, have also reached the same stage of growth. Within a fortnight or so the tadpole undergoes great changes. It ceases to swim about, and attaches itself to some piece of weed in the water by a kind of sticky sucker on the under-surface of the head. The outer skin is then cast off and with it the external gills. The fore-limbs appear, and the tail, which has served as

nourishment during the fast, is gradually absorbed, and becomes a mere stump. The tadpole has now become a frog and leaves the water to live on land.

Coming to the reptiles, we find that here the embryo develops completely within the hard shell of the egg, which also contains the yolk for its sustenance. The female lays the fertilized eggs in some hole which she has dug. The eggs are hatched out when the young have attained the mature stage.

Of course, it is well known that birds are hatched from eggs (Fig. 36). As in the reptiles, the eggs are protected by a hard shell containing, besides the embryo, the yolk, which is by far the greater in bulk. The chicks when fully developed crack the shell with their beaks and emerge. In a very short time they are capable of looking after themselves.

A most interesting transition stage is to be found between animals that lay eggs and those that give birth to living young. Thus we find among fishes and also among reptiles some species whose eggs are hatched inside the mother's body, after being fertilized by the male. For instance, the shark and dogfish give birth to living young, these being passed out one at a time either every day or every second day for a month or two during the warm season. On the other hand, we find that the lowest mammals still lay eggs, which are hatched outside the body.

Mammals are animals which have breasts (*mammæ*); these contain milk glands, which produce milk for the nourishment of the young. The duck-billed platypus and the spiny ant-eater (*echidna*) both lay eggs. The former lays her eggs in a nest made in a burrow and broods over them like a bird; but she feeds the newly

hatched young with a milky secretion which is exuded from the skin of her body and which the young lap up. Another step is taken by the spiny ant-eater, which with its beak-like muzzle thrusts the eggs, as soon as they are laid, into a pouch on the belly similar to that of the kangaroo. The eggs are kept here until they are hatched. The young feed in the same manner on a milky exudation from the skin.

A further advance is made by the marsupials, to which the kangaroo belongs. Here the fertilized egg (which has no shell) remains in the womb of the mother to undergo the first stages of development. The young are born alive, but in a very immature condition, and have therefore to be carried about in the warm pouch of the mother. This pouch, situated on the belly of the mother, is furnished with milk glands which do not merely open to the skin, but end in proper teats. The newly born kangaroo (hardly one inch long) is attached to the teat of the mother animal, who may be more than man's size.

As in the marsupials, so we find that in all mammals the fertilized ovum remains in the uterus during the embryonic development. It has no shell, but attaches itself to the wall of the womb and draws nourishment from the internal surface of the womb. As soon as the embryo reaches maturity, birth takes place, the young being expelled through the vagina by the contractions of the uterus into the outer world. The period of intra-uterine development is called gestation, and varies in length with different animals, the higher generally having a longer gestation period than the lower (though this is not invariably so), because the more advanced the animal, the longer

the time needed for embryonic development. The secretion of milk starts with gestation, and is in full flow at the birth of the young. It lasts as long as suckling goes on.

2. Reproduction in Man.

Gestation in human beings (called pregnancy) last, on an average about 280 days (ten lunar months). It has already been pointed out that in the act of mating the semen of the male is ejaculated into the vagina. In any case, the sperm by its active movement reaches the uterus, where it finds the ovum. The ovum is shed by the ovary at periodical intervals and travels along a connecting tube (oviduct) into the uterus, where it awaits fertilization. This takes place, therefore (with very rare exceptions when the ovum has not reached the uterus), in the womb. The act of fertilization is called conception, and pregnancy commences thenceforth. The first sign of pregnancy is the cessation of menstruation. There now take place certain changes in the mother's organism, which is especially adapted for the bearing and carrying out of the young. The fertilized ovum attaches itself to the wall of the uterus and grows gradually; with it the uterus grows, modified in structure so as to give proper shelter and sustenance to the living being inside it. This growth shows itself externally in the steady enlargement of the abdomen (belly). The milk glands of the breast develop considerably in order to yield milk to the new-born child. The embryo is connected with the mother by the umbilical cord, which runs from the navel or umbilicus of the child to a specially thickened part of the uterus called the

placenta. Through this an exchange of nutriment and gases takes place between mother and child. The embryo does not lie free in the uterine cavity, but is enclosed in a bag of membranes (a sort of bladder), which is filled with water in order to allow the embryo to move about freely. The embryo is not drowned in this water, because it does not breathe air at all, but breathes, as it were, through the umbilical cord, receiving, as just pointed out, the neces-

FIG. 40.—THREE EARLY SUCCESSIVE STAGES OF THE HUMAN EMBRYO.
(From "Darwin and After Darwin," by G. J. Romanes. By permission of Messrs. Longmans, Green & Co.)

sary gases from the mother. The embryo during its growth passes through various changes. If by accident birth should occur before the sixth month, we call it abortion or miscarriage, as the child cannot live. When the sixth month is reached it is capable of independent life, and is now called a fœtus. Such a child, if prematurely born, is however very difficult to rear. The older and more developed the fœtus, the greater its chances of life if it should happen to be

born prematurely. The superstition that an eight-month child cannot survive, while a seven-month child can, has no scientific foundation whatever. Normal birth occurs when maturity is reached.

It was not always known that the semen played an essential part in the process of fertilization. In fact, it was only in the year 1685 that this was discovered. The division of cells and their building-up of the body has only been known since 1850. Conception and everything connected with it has always been a mystery to people. It was even denied that the father had any share in the creation of the new being, seeing that the child develops in the womb of the mother. Some Australian tribes affirm that the child is fully developed from the first, and that it enters the mother's body in the shape of a bird, if it is to be a girl; if it is to be a boy, it enters in the shape of a snake, and then takes its original form again. The old Greeks believed that the semen does not actually contribute to the make-up of the child, but acts as a sort of force starting the whole process of development of the ovum. There are still some primitive peoples who believe that the father gives the soul to the child, while the mother supplies the substance of the body.

There have existed and there still exist a number of superstitions about the sex of the forthcoming child, which is said to be determinable during and even before pregnancy. Thus in Serbia, Bulgaria, Russia, and other backward European countries, a male infant is placed on the bride's knee, so that she may give birth to a boy. Similar customs were known to the ancient Indians. The Suaheli believe

that a woman who is active and diligent during her pregnancy will give birth to a boy; but a sleepy, dreamy mother will bring a girl into the world. Even modern scientists have tried to influence the sex of the child before birth by special dieting of the mother. Sugar was supposed to favour the production of boys. This is contrary to the old nursery rhyme, which tells us that little girls are made of sugar and spice and all that's nice; boys being made of frogs and snails and puppy-dogs' tails. But unfortunately it must be admitted that all such unscientific and scientific attempts and forecasts have so far failed.

A somewhat picturesque notion still very prevalent is that a woman with a child should look only at beautiful things and think only noble thoughts, for then her child will be born beautiful and noble. Akin to this idea is the belief that mental impressions of the mother are transmitted as corresponding physical defects to the child; for instance, if she has been frightened by a mouse, it is said the child will be born with a birthmark on the body in the shape of a mouse. In most cases the resemblance is a mere coincidence; but the question of the influence of maternal impressions on the offspring has not been definitely settled either way, though scientific opinion tends to discredit them.

Among primitive people woman is considered impure during pregnancy, and therefore she must in some cases leave the house a few weeks before the expected confinement, and go to one of the huts specially erected for that purpose. The Yakutes do not allow a pregnant woman to eat at the same table with the others; she spoils the bullets of the hunter and

weakens the labourer. In German New Guinea she is not allowed to join in the fishing. In one of the negro tribes the pregnant woman has to wear a bell, so that people can avoid her. In China she must not go near the silkworms, for fear of spoiling them. In some cases even the husbands are considered impure, and are not allowed to go to battle or to the hunt. (This is a notion similar to the couvade, which we shall describe later.)

As we have seen with regard to menstruation and marriage, uncivilized people have a superstitious awe of the dire effect of evil spirits. This also shows itself in connection with pregnancy and childbirth. In Celebes a woman who is expecting a child must not go out with her hair loose, for a demon can easily lodge in loose hair and injure her and her child. There is a similar belief in Bohemia; here a woman must carefully cover her hair for the same reason. Amulets are worn as a protection against evil spirits by enceinte women of uncivilized and even of civilized peoples. In Esthonia in Russia, a woman who is expecting a child changes her shoes every week, so as to mislead the devil, who is on her track to get the little newcomer into his clutches. The Russians and other peoples have also great fear of the "evil eye," which is supposed to be especially potent against the expectant mother; it may injure her and her offspring, which will be born in great pain.

The actual birth of the child takes place by muscular contractions of the uterus, which expel the child along the female passage. These contractions are called labour pains. The membranes which enclose the child burst while its head enters the vagina.

The head then passes along the vagina, and the child is thus born; for as a rule the birth of the child takes place head foremost. Occasionally, however, it may be born breech (*i.e.*, buttock) foremost. Since the child is attached to the womb by the umbilical cord, this has to be severed; it is cut off to within an inch or two of the child's body. The short remaining end dries up and falls off in a week or so, leaving as a mark the navel. The placenta and the umbilical cord are also expelled after a short time as the after-birth. The act of birth is technically known as parturition; in everyday language, however, a woman who is giving birth to a child is said to be "confined," or going through her "confinement." For, as some time is needed for the womb to return to its normal state, it is necessary for the mother to lie up, generally for about ten days. This period is called the lying-in or puerperal period. Milk begins to flow on about the second or third day, and steadily increases in quantity, lasting as long as the child is suckled. Every mother should suckle her child for about ten or twelve months. The taking the child from the breast is called weaning. Menstruation generally remains in abeyance during the period of suckling (lactation), though this is by no means invariably the rule.

Lying-in does not take place among some of the savage races. Thus the nomadic tribes have no settled abode, but wander about, pitching their camp wherever convenient. There is no opportunity for the woman to go to bed for the confinement; many births, therefore, take place whilst the tribe is on the march. When the woman feels the com-

mencement of labour, she just goes aside, attends to herself, and then catches up with the rest of the tribe and continues to the march, as if nothing has happened. The savage women must be hardier than those of civilized races; otherwise they could not survive, if they did not go through childbirth so easily. As the other members of the tribe cannot linger in their journeys, the women, if not strong enough, would be left behind and die of starvation. Amongst primitive agricultural tribes a woman working in the fields will on the first signs of childbirth calmly go under some neighbouring tree, bring the child into the world, bite or break the navel cord off, then bathe herself and the child in the nearest river, and start work again, leaving the babe under the shelter of the tree.

Beliefs and superstitions about childbirth are very prevalent, and are similar to those in connection with other sex functions. A woman just after childbirth is considered impure, and is therefore injurious to those around her. Hence many primitive tribes have special lying-in huts in which the woman must stay during her confinement, and for certain prescribed periods after it. In many cases the period enforced lasts longer after the birth of a girl than that of a boy, showing thereby, as in many other instances, the inferior value attached to the female sex. As a rule, purifications of various kinds have to be undergone before the mother is once more allowed to mix with the other people. In many tribes the man is forbidden to go near his wife during the lying-in, as he might lose his strength if he did so. This period lasts generally until the navel cord has

dried up. Even among some European peoples there still persists this fear of the injurious effect of contact with a woman delivered of a child. In Russia, for instance, and in some parts of Hungary she is not allowed for a certain time to go near a well or a stream, as she would cause it to dry up.

There exist some curious customs regulating the food which may or may not be given to a woman in childbed. Sometimes special teas are brewed from herbs for her; in other cases she is forbidden to take meat or to drink water. In some instances solid food is given to her; in others, again, little and light food only; so that all in all we see the poor women more ill-treated than treated.

Once more we have to refer to the belief in evil spirits which are particularly active during this period, when special precautions have to be taken to protect mother and child against them. The lying-in huts also serve as a safeguard against evil spirits; during a confinement food is thrown outside the huts into the woods for the spirits, so as to keep them occupied in eating. In Russia the expected time of delivery is kept secret, for it is thought that a woman will have additional suffering in confinement for every person that knows about it; a wicked person could even prevent the birth altogether. In Armenia they believe that the devil will attempt to exchange or suffocate the new-born child; hence they burn incense in the room to drive him away. Various amulets are worn or hung about the room, as are also special scripts containing magic words in order to ward off the influence of evil spirits. This is still customary among the Russians, Italians, Hungarians,

Jews, etc. The Bible or Prayer Book is often put under the woman's pillow to protect her.

It sometimes happens, though rarely, that part of the fœtal membrane tears off during birth and clings to the advancing head of the child. This piece of membrane is called a caul, and is supposed to bring good luck to the original owner, and even to others who may come to possess it. In England advertisements for cauls were sometimes inserted in *The Times* newspaper. In 1779 twenty guineas was the price for one; in 1848 it had dropped to six guineas. Sailors believe that the possession of a caul on board a ship will prevent shipwreck and drowning. Great value is also attached to the piece of navel cord which is left on the child's body to dry up. It is sometimes put into a little bag and hung on the child's neck as an amulet.

Perhaps one of the strangest customs—and yet not strange, after all we have heard about the primitive mind—is that of the couvade. The couvade consists in the lying-up of the man when his wife gives birth to a child. He pretends to go through labour, and is waited on by his friends and sometimes even by his wife, who has to get out of bed straight after her confinement. Various explanations of this quaint custom have been offered. The people themselves hardly seem aware of its origin. Some say it is to mislead the devil or evil spirits, so as to ward off an attack on the man's wife. Another interpretation is, that as the father gives the soul to the child, he must take precautions just as if he were giving birth to the child. Again, another reason given is that it signifies the man's sympathy with his wife and his

willingness to share the parental responsibility. Altogether the couvade implies a sort of symbolical acknowledgment of the child by the father.

All the various kinds of superstitions, so often mentioned already, once more reappear in connection with lactation. Thus in Bohemia a suckling mother may not spin, for her child would become consumptive if she did so. In Brandenburg (Germany) nursing mothers wear amulets made from a stone frequently found there in the sand. These are called fright-stones, and can be bought at the chemist's for less than a penny. They are supposed to protect the child against any ill-effects from the milk, which might become harmful through a fright of the mother. In Würtemberg they believe that the child must be put for the first time to the right breast; otherwise it will become left-handed. In the Aaru Islands the mother must not give the breast to her child for nine days, but must drop daily some of her milk on the navel wound, in order to make it heal quickly. On the name-giving day the child is put to the breast and different names are called out. The name pronounced when the child starts suckling is the one chosen for life. It is still believed by some that qualities can be transmitted through the woman's milk to the babe itself, and that therefore a wet-nurse can be harmful to the child when suckling it. Similarly there are many tales of children being nursed by animals. The most famous case is that of Romulus and Remus, whose foster-mother was said to be a she-wolf. The children are supposed to acquire the character of the animal-nurses and to become fierce like them. Of course, this is not correct; since,

according to the modern theory of inheritance, parental characters are only transmitted to the children through the germ cells.

It often happens that for some reason or other the milk ceases to flow before the time for weaning the child. Special precautions are therefore taken to prevent this. The most natural method is to diet carefully, partaking of food that will increase the flow of milk and avoiding food that may lessen it. But superstition holds its sway here also. Thus we find amulets worn for insuring a sufficiency of milk. In the neighbourhood of Perugia in Italy a special pin is worn in the hair for this purpose. In Herzegovina a mother wishing to increase her milk must catch a living fish, squirt some milk from her breast into its mouth, and then let it swim again. By the Caspian Sea in Russia other means are employed for the same purpose. The woman fills a nutshell with quicksilver and closes up the opening with wax. This is then stitched into silk or woollen material or into glove-leather and worn suspended from a ribbon round the neck, so that it hangs well on the breast. In Lithuania there exists a belief that a child whose mother has stopped suckling for a few days, and then started again, will have the evil-eye. In Serbia such children are said to become witches, and have the power with one glance to cause a rider to fall off his horse.

It has already been pointed out that the normal weaning of the child should occur between the tenth and twelfth month. Some primitive peoples, however, suckle their children for a much longer period. Here again there are many quaint customs which are

supposed to stop the flow of milk when desired. The Russian woman of the Caspian Sea only needs to turn the nutshell filled with quicksilver on to her back instead of on her breast to cause her milk to cease. In another place the mother who wishes to discontinue suckling must let some of her milk drop into the fire. Mother's milk is often used as a medicine. The application or partaking of such milk is said to be capable of curing fevers, deafness, whooping-cough, and many other ailments.

Finally, we should mention the fact that a woman may bear more than one child at the same time. This is called multiple pregnancy. Twins occur about one in eighty cases of normal birth; triplets perhaps one in six thousand cases. Even more than three children at a birth have sometimes been observed. This is, of course, harking back to the animal type, in which litters of young generally consist of any number from two to six and even more. Twins may arise from two different causes. There may be two ova in the uterus and each be fertilized by a separate sperm, in which case the twins may both be of the same sex or of different sexes; or one properly fertilized ovum may split up into two, each forming a complete embryo, in which case, it is said, both embryos will always be of the same sex.

The birth of twins is received with horror by some races; the children are often killed or exposed. In the Caroline Islands one of the children is given away to a brother or near relative of the father, for the islanders believe that otherwise the child would die. In Suaheli they used to kill twins, but now they give them to the missions, as they do crippled children.

Amongst the Indians in Brazil it is considered a great disgrace to have twins, and the mother is laughed at by the other women for breeding like the mice. The people of Esthonia believe that the birth of twins will bring about a year's dire war. People try to prevent multiple pregnancies by various curious methods; one of these is to avoid eating twin fruits or twin vegetables.

On the other hand, we find that other peoples welcome twins with great rejoicing. In one South African tribe the parents of twins are considered holy, and odes are sung in praise of the lucky mother by the other women. In the Aaru Islands twins are greatly desired, as the parents are given many presents of mother-of-pearl. Amongst the Cameroon negroes a husband holds his wife in great esteem if she has brought twins into the world, women being valued there according to their fertility. In many places in Europe a mother of twins is respected and held specially blessed.

CHAPTER II

PARENT AND OFFSPRING

THE parental feeling is only of slow and gradual growth; there is scarcely any evidence of its existence among the lowest animals. They show a complete absence of care for, and indifference to, the offspring. Thus there ensues an enormous waste of life, eggs being cast adrift to all the ravages of their surroundings. This seems hard to understand; but Nature is reckless and can afford to be lavish, since she deals with such masses of individuals. As Tennyson has said: "So careful of the type she seems, so careless of the single life." For according to Darwin's theory of evolution, there takes place a natural weeding-out among the individuals of any species, only the few—the fittest for their surroundings—being retained for the continuance of the race. This weeding-out process applies to all ages, and starts even with the eggs.

1. PARENTAL CARE IN ANIMALS.

Among the insects, not to go any lower in the animal scale, most species lay their eggs in places suitable for their later development; but after this their parental solicitude is at an end, and they know no more about their offspring. In fact, some insects die as soon as

they have laid their eggs, their purpose in life, the propagation of the species, having been accomplished. Insects lay a tremendous number of eggs, of which only few develop into the larval form. These in their turn stand very little chance of attaining maturity, being greedily devoured by their numerous enemies. It has been calculated that a single sparrow is responsible for the destruction of 3,500 caterpillars in a week. Other birds, such as the titmouse and the chaffinch, have been known to dispose of grubs at the same rate. It can thus be easily seen what quantities of eggs must be laid in order to allow for such waste.

An exception to the rule of complete neglect of the young is found among the bees, which are the intellectual aristocracy of the insects, and in some ways emulate in their domestic arrangements the social development of the higher animals. The larvæ of bees are placed in cells. These are, in the case of the solitary bees, constructed by the mother, each cell being packed with a mixture of pollen and honey. Among the social bees, it is the workers who deposit the larvæ in the cells; they also collect food and tend the young. Similarly among the wasps and ants the grubs are fed and cared for by the workers. The ants move their young about to different places in the nest, according to conditions of temperature and moisture, and they frequently take them above-ground for an airing. Some species even go out slave-hunting, not unlike primitive human tribes, and domesticate their captured prisoners, the aphides, to serve as milch-cows, coaxing them to yield milk for the young.

Coming next to the fishes, we see that among them the care bestowed on the young varies greatly. Females of many species deposit over 100,000 eggs each. The cod, pilchard, and herring, for example, are extremely fertile, and if they were not destroyed in masses they would soon cover the whole sea. Any species, if not kept in check up to a certain point, would soon people the whole world, making the earth uninhabitable for any other species.

Once the eggs are laid, the female fish troubles no more about them, leaving them to the destructive forces that surround them on all sides. On the whole, as the numbers of the species tend to remain constant, only two of the eggs laid by each female need reach maturity in order to replace the parents.

There occur two kinds of eggs in fish. In some species the eggs, which are discharged directly into the water, always rise to the surface and float in the warmer water exposed to the light and sun. These eggs are known as pelagic; they contain very little food-yolk, and the little fish, as soon as they are hatched, have to begin feeding themselves. Out of the enormous number of eggs laid only a few escape destruction. The females of other species descend to the bottom and lay their eggs there. These are called submerged eggs; they are larger than the pelagic eggs and heavier than sea-water. Some choice is shown in the selection of a ground for depositing such eggs; they adhere by various means to seaweed or stones. Being safer from destruction, they survive in greater numbers, and thus a lesser number is needed.

A certain amount of brood-care is to be found

already among the fishes, and it takes on some curious forms. It is rare for the female to play an active part; in fact, quite unlike the habit of the higher animals, the male is the guardian of the young, though there are exceptions to the rule. It is a remarkable fact that while male fishes will devour the eggs of any other species, they will not touch those of their own species. Instinct acts here with astonishing certainty. In some species, as Sutherland has described, "the flat belly of the female becomes at breeding-time quite soft like putty, so that when the eggs have been fertilized by the male, by rolling herself upon them she makes them stick to her. There they are carried until they are hatched." This method is so successful in protecting the eggs that less than 2,000 are sufficient to keep up the number of the race, though the nearest species, which have no such habit, require about 60,000. In other cases, the female carries her eggs in a pouch; they are extruded into this pouch, and are hatched there in comparative safety.

It is more usual, however, for the male to undertake the duty of caring for the young. This is done in many ways. Some males are furnished with pouches to carry the eggs until they are hatched. Others, again, attach the eggs to the underside of the body, which is soft and adhesive. Stranger still are the cases in which the male carries the eggs in his mouth until they are hatched, and sometimes even keeps the young there until they are of considerable size. This method is so safe that very few eggs are needed to keep up the number of the race. A slight variation is exhibited by the Para-

dise-fish, whose "male, after fertilizing the eggs, carries them in his mouth to a little floating nest of air-bubbles which he has already blown upon the surface." In some instances the male shows his care only by mounting guard over the eggs wherever they happen to be laid. In the butterfish (Fig. 41) the male and female take turns in protecting the eggs by coiling their bodies around the mass, until the young are hatched.

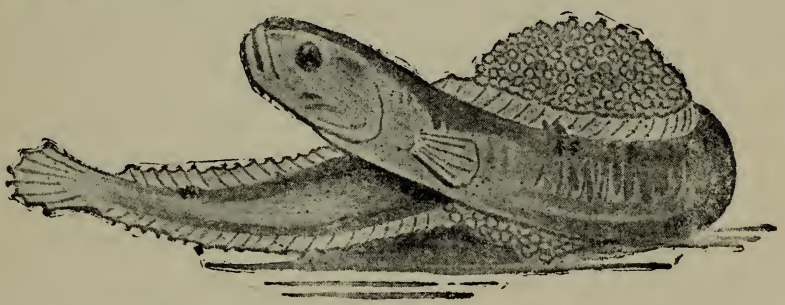


FIG. 41.—BUTTERFISH AND EGGS. (After Holt.)

(From "The Infancy of Animals," by W. P. Pycraft.)

Perhaps we may take as the next step in evolution the construction of nests for the young; for even among the fish, generally regarded as so dull, such an elaborate instinct is found. As a rule, this is performed by the male fish alone, but there are some instances of both parents uniting in this labour. We have an example in the American bowfish: both male and female participate in the making of the nest, which is formed by clearing away the reeds and making a shallow depression at the bottom of the pool, in which the eggs are hatched. The young are jealously guarded by the male, who keeps the swarm together.

The common stickleback supplies us with the most

advanced type of brood-care known among the fishes. The male begins his labours by building a nest; this is made from leaves, twigs, bits of weed, and straw. He works the material with his tail into a loose circular structure, weighting it with sand and gravel if the current of the stream is too strong, and binding it with mucus. When this work is complete, he goes in search of a female and drives her into the nest—not unlike the early wife-marauders; there she is kept until she has laid her eggs, which he then fertilizes. Having deposited the eggs, the female wriggles out again, and does not trouble about them any more; but the male takes up sentry duty, mounting guard against all comers at the entrance of the nest. If other fish approach, he dashes at them, and has been known to attack bigger fish than himself, in some cases losing his life in the struggle—a beautiful example of parental sacrifice for the young, and in this instance by the male and not the female. When the eggs are hatched, he still keeps watch over the young, of which there are about fifty. This continues for six or seven days, but the young become too restless in their search for food and finally wander away.

Rising a step higher in the scale of animals, we come to the amphibians and reptiles. It has been mentioned in a previous chapter that the female frog deposits her eggs in ponds and ditches, taking no more care of them. Now there are some exceptions to this rule; for certain frogs are provided with special sacs for carrying the eggs until they are hatched. Here again it is often the male that sees to the safety of the larvæ. "Among the pouched frogs of America the skin on the back of the female is very loose, so

as to form a shallow pouch with an opening towards the rear. The male seizes the eggs as they issue from the oviduct (the passage leading from the ovary outwards), and after fertilizing them, he thrusts them with his hind-foot into the sac. Here they grow rapidly until the back of the female becomes swollen." In another species of frogs the male is furnished with a pouch on his throat. "As soon as he has fertilized

FIG. 42.—MIDWIFE TOAD.

(From "The Infancy of Animals," by W. P. Pycraft.)

the eggs, he stuffs them into this pouch, where they grow and spread along the skin of the belly until the whole under surface of the belly is full of them. Remarkable, too, is the case of the midwife-toad. When the eggs, which are attached to one another by a thread as if on a string, have come from the female, the male fertilizes them and winds the string of eggs round his hind-legs. Thus laden, he conceals himself in

a hole in the ground or under a stone, remaining there for ten or twelve days until the eggs are hatched, only coming out at night for food, or to dip the eggs into water. When they have reached the tadpole stage he takes the young tadpoles to the water, where they are left to fend for themselves. Some slight attempts at preparing a nursery for the young are made by other species. The female Brazilian tree-frog goes to the shallow end of a pool and brings up loads of mud on her head, which she piles up gradually in a circle to form a tiny pond, smoothing it inside, until the edge is above the surface of the water. The spawn is deposited in this nest.

In reptiles it is always the female that shows the parental care necessary for the welfare of the young; for a certain amount of incubation is necessary here, which devolves upon the female. This method of incubation safeguards the eggs from destruction, so that the original output of eggs needs to be relatively smaller. The female crocodile digs a hole in the ground, into which the eggs are laid. The hole is then filled up with earth, she herself selecting the top for her sleeping place. It takes about twelve weeks for the eggs to hatch. The young give warning by a slight barking noise when they are ready to come out, upon hearing which the female removes the earth from above them. After this they need no further assistance. Most snakes bury their eggs in the ground and incubate them; but there is an exception in the case of the python. The female python jealously guards her eggs by coiling her body around them. This is done for about two and a half months, until the eggs are hatched. Attempts have been made to

bring a female python away from her eggs by offering her delicacies, but without success.

The birds furnish us with the first example of a definite step forward in family relationship. Not only do they display signs of conjugal affection, as has been shown at length in the chapter on courtship, but they also give evidence of a united family life that lasts at least until the young brood are capable of looking after themselves completely. Birds' eggs need a certain time for embryonic development, and require heat in order to be hatched out. The mother-bird supplies this by brooding over the eggs. As the young birds are generally born in a fairly immature condition, they need a good deal of attention after birth, until they are fit to take care of themselves. As soon as a pair of birds have mated, they set about procuring or constructing a suitable nest for their future offspring. Evolution is found here as everywhere. Progress not only takes place along the whole line of the animal series, from the lowest to the highest, but also in a smaller way in each single class, the steps made in different directions in the various classes often overlapping. It is not at all surprising, therefore, to discover that the grade of parental care rises with the mental development in birds. But while some species are careless in the placing of eggs and in the after-care of their young, others, on the contrary, exhibit the most intelligent forethought. The former recall the habits of some of the inferior classes of animals. Running birds, such as the ostrich, rhea, and cassowary, do not build a nest, but simply dig a hole in the earth or sand and place the eggs within it. The care of these very often devolves

upon the male, the female being quite indifferent to them, which is rather unusual among birds. The young of this type of bird generally arrive in the world in an almost mature condition, so that they need on the whole little parental care. Yet they suffer for want of it; for in their early days they fall a prey to many foes, not being sufficiently developed to defend themselves. As a rule, where there is a waste of material, there is a compensating increase in production, and *vice versa*. Birds breed on the average once or twice a year, and only lay a limited number of eggs at each breeding season, from one or two in some species, up to four or more in others. It is interesting to note that the fertility of the birds of the lower order is, on the whole, larger than that of the higher order.

A steady increase in the amount and quality of parental care is to be found among the next class of birds to be discussed, and with it also a corresponding decrease in the number of offspring. To this class belong the grouse and partridge, the quail, penguin, petrel, and other swimming birds. Some of these still lay their eggs in sand and gravel, just like the running birds mentioned above; others, such as the penguins and petrels, hatch their eggs between their thighs on high rocky ledges. The emperor penguin, which only lays one egg at a time, keeps it upon the upper part of her foot, out of contact with the ice, and even nurses the young there for a time (Fig. 43). A warm flap of skin and feathers, which becomes enlarged during the breeding season, hangs from the bird's abdomen and protects the egg, and afterwards the young, from the severe weather. The male and female take

turns at the nursing; they relieve each other at certain intervals, bowing in a quaint manner and carefully examining the egg before it is handed over. These birds have so great a desire to brood that, if anything happens to their own egg, they will steal another for this purpose. Truly a fine example of parental feeling.

The majority of these classes of birds, however, make nests, which, though perhaps poorly formed, are yet warm and soft for the eggs. It is in these cases always the female that broods; and this must always be considered a progressive step. Sometimes, as in the case of the duck or fowl, the male departs and does not return until the young are nearly fledged. But in many cases the male shares the duty of his mate, either relieving her of the brooding for awhile, or remaining to feed her and protect her against any intruders. Both parents are thus at hand to help when the young ones break their shells. We can here recognize the first beginnings of family feelings. The newly hatched young are not quite so well developed as those of the class previously mentioned, and require for a time the protection and warmth of the mother's wing. They are, however, very soon active and able to manage for themselves. Among the swimming birds parental care lasts from two to four weeks, but never longer.

We can establish a further progressive step in those birds that show a still greater care in the preparation of their nests. They also generally give the most intelligent and assiduous attention to the young brood. There are, of course, exceptions to this rule; evolution does not always proceed in straight lines.

We find that in these species the male and the female remain together, sharing the labour of nest-building and the general care of their offspring. Some birds do not build a nest, but choose natural cavities such as burrows, caves, etc., to place their eggs in. The cockatoo, for instance, seeks a hole in a tree, enlarges it with the beak until it is big enough to allow the body to enter, and then lines the interior with leaves, feathers, and other materials, until a soft, warm home is ready for the youngsters. The male insures safety by guarding the entrance. Owls also select holes in trees and line them with warm material.

The simplest forms of nests, such as those of the pigeon, crow, and heron, consist only of a platform built of twigs. The magpie improves a little on this by surrounding the platform with a hedge, or roofing it over with twigs. A still further advance is made by other birds. They first erect a platform of sticks, cement it with mud, and then cover it over with a dome of sticks, leaving an entrance at the side. The nests of the small singing birds are still more elaborate and skilfully made, being woven out of fine hair, vegetable fibre, and wool, and softened with saliva by the birds. One of the most intelligent species of birds is the weaver or tailor bird, whose nest is constructed in a truly marvellous way (Fig. 44). Choosing large leaves, the male and female together pierce holes with their beaks along the two edges of the leaves. Then the male without and the female within pass straws and fibres in and out to each other through the holes, stitching the leaves together until a purse-like nest is completed. A row of thorns at the narrow entrance keeps out all enemies.

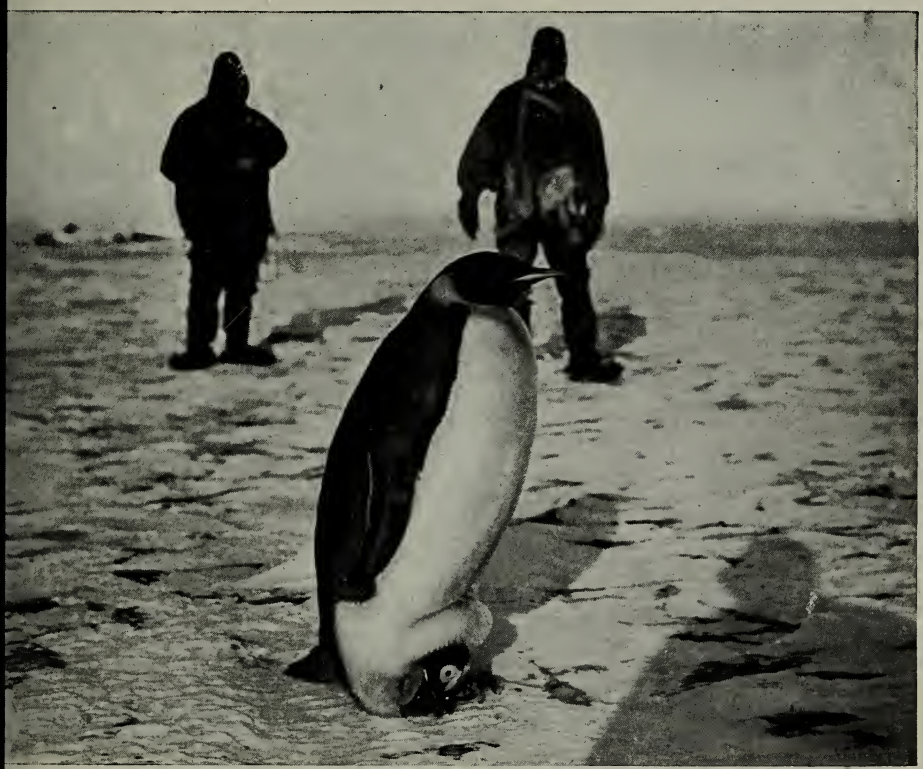


FIG. 43.—EMPEROR PENGUIN.

(From Scott's "Voyage of the *Discovery*.")

Fig. 44.—Nests of Weaver Birds.

Nests are built not only on trees, but also under the eaves of houses. The swallows, for instance, choose this situation for their artful homes, which are constructed from little balls of earth collected by the birds and mixed with bits of hay.

The more highly developed a species, the more helpless are the young at birth. This is a general rule among all animals. All the birds of greater intelligence are born very immature, most of them naked and some blind; and they are all completely dependent upon their parents. The parrot, which is considered the most intelligent of the birds, is at birth the most immature of all. It cannot see for eight days, and is unable to leave the nest for a period ranging from thirty to fifty days, according to the size of the species. The family life of the class of birds last discussed is therefore much more prolonged than that of any others.

It is not only in the nest-building and care of the eggs that the birds show their parental affection. Many duties lie before them after the young are hatched; and the more highly developed the species, the greater is the care bestowed upon the offspring. Besides supplying the warmth that the young brood needs, the parents shelter the nestlings from sun and rain by spreading their wings over them. Even the young of those birds that enter the world fairly mature still need protection by the parents for a time. If any danger is near, the parents exchange call-notes that are recognized by the young from the first; and on hearing the call they shelter under the parents' wings, or squat down. Sometimes, as in the case of the plover and the partridge, the mother will divert

attention from her little ones to herself by pretending to have broken her wing or to be lame. Other birds savagely attack intruders; some have even been known to leave their nest carrying the eggs in their beaks when there has been a suspicion of danger. Certain species carry their young about with them; some, as the woodcock, between the legs, holding them down with the beak; others, like the grebe and the swan, on the back. Birds seem to have an inherent sense of cleanliness, and with few exceptions most young birds and their nests are kept in a scrupulously clean condition. All refuse is cast out of the nest, and the nestlings are taught to void their excretions over the edge.

The young are fed for a period by the parents, except those that are born fully mature and can seek their own food immediately after birth. When the young are fed on insects, the parents have a long and weary task hunting all day for them. Pycraft relates that "a pair of blue titmice have been observed to make no less than 475 journeys to the nest during a day's foraging extending over 17 hours." Some birds feed their offspring on regurgitated food, which is food partly digested and then brought up again for the young. Young pelicans take their food from the pouch-like bill of the mother (Fig. 45). Cormorants thrust their bills down the mother's throat into her stomach and help themselves to food. Young pigeons are fed on so-called pigeon's milk, which is partly digested food and partly a secretion from the crop of the pigeon. Young petrels are fed on an oil distilled from the fish which form the food of the parents. This oil is also used as a weapon of defence by both

Fig. 45.—Brown Pelican Feeding Young. (After Chapman.)

Fig. 46.—Young Flamingoes Feeding Each Other. (After Beebe.)

(From "The Infancy of Animals," by W. P. Pycraft.)

parents and young. Young flamingoes feed each other or exchange food sometimes (Fig. 46).

The duties of the parents are not ended with the feeding. The young ones must also be taught to hunt for their own food. Nestlings are very timid, and patience is essential in teaching them to use their wings; when they are too timorous to venture out of the nest, the parent will often fly a short distance away, holding some food in the beak and with it tempting the little one to experiment with its wings.

It is a strange fact that many birds, as, for instance, the eagle, drive the young away as soon as they are able to support themselves. The parental affection ends at the phase when the young one can fend for itself; after this it is an intruder taking up room where there is none to spare. Still more curious is the complete want of affection exhibited by the cuckoo, who places her eggs in other birds' nests and troubles no more about them. Migratory birds also often desert their brood when the wandering spirit is upon them; they have been known to leave the half-fledged nestlings, born too late in the season and therefore backward in their development, to die of starvation. Cruel as this may seem, it is necessary; for if the parents were to remain, they would all die together, so that there would be none left to bring forth the next generation. This shows once more that Nature cares chiefly for the race, and but little for the individual.

In mammals the earliest stages of brood-care have already become part of the unconscious functioning of the body. Instead of finding or making safe places for

her eggs, the mother retains them in her body, supplying the developing embryos with warmth and sustenance up to birth. This insures greater safety for them. After birth, instead of having to seek food for the young, she is fitted with special milk glands yielding nourishing food from her own body, which sustains the young until they are old enough to take other food. This, again, is of great advantage, as there is thus no danger of the young starving. At the same time, the bond between mother and offspring becomes very much closer, as with the dependence of the young the affection of the mother for them increases. It has been pointed out repeatedly that, the more developed an animal, the longer it takes to mature; it is, therefore, not surprising to discover that mammals, with rare exceptions, are not prolific. In the vast majority of cases they breed once or twice a year, rarely oftener; and the usual number of offspring at birth is one, two, or three, although it may go up to six and even more in certain mammals.

While the production of living young is characteristic of the mammals, still we find some exceptional instances of viviparous species already below the mammals, namely, among the fishes and reptiles. On the other hand, we have seen that the lowest mammals, the duck-billed platypus and the ant-eater, lay eggs, though they have other contrivances which relate them to the mammals. As usual, here too Nature makes no jumps, but works by transition stages. The lowest class of mammals producing living young are the marsupials. The marsupial egg is hatched within the mother's womb; the young, however, is born in a very immature condition, as

already described in the previous chapter. Immediately after birth, the mother with her lips places the tiny little thing in her pouch, where it is attached to a teat, the milk therefrom dropping ceaselessly into its stomach. It goes to sleep there, continuing its development for a time in the pouch. The fur appears and the claws grow; gradually it relaxes its hold on the teat and rolls to the bottom of the pouch, waking up every ten minutes for a tiny drink of milk. At a certain stage of its development the little thing is able to push its head out of the pouch and look around (Fig. 47). Later on, it occasionally comes out altogether; but at the first sign of danger the mother stoops down and opens the pouch widely, whereupon the youngster jumps in head foremost and wriggles round to its normal position with only the head protruding. The number of young at a birth varies in the kangaroos, but it is generally one or two. They breed only once a year. The females of the marsupials have all the care of the young, generally for about a year; the males appear to take no interest in their families, nor do they share the work of protecting the young.

Some marsupials have no pouches: the mother lifts up her young ones and attaches them to her teats, which they suck down into their stomachs; they hang on to the mother's body, partly by the teats and partly to her long fur, and thus continue to grow there. When sufficiently developed, they climb on to the mother's shoulder and are carried about. The Koala bear furnishes us with an illustration of this method of carrying (Fig. 48). The American opossums, who give birth to a few young at a time,

have solved the difficulty of transporting their tiny offspring in a manner peculiar to themselves. They have long prehensile tails; the little ones are borne securely on the mother's back, clinging to her fur and twisting their tails around hers (Fig. 49).

There is nothing of special interest in the parental care among hoofed animals. The period of gestation is fairly long, and the young are born in a well-developed condition. The number at birth is rarely more than one or two, but the swine have as many as ten at a time. The females make no preparation for the advent of the young; but they are very much devoted to them. Nothing will induce the mother to leave the young; Galton declared from his own observation that a newly calved cow is almost more than a match for a lion. In herds the bulls also help the cows to defend the calves. Wild horses are known, when attacked, to place the foals in the middle, forming a ring round them and kicking out savagely with their hind-hoofs against any aggressor. Deer are rather more feeble at birth than most of the other hoofed animals; the mother, therefore, keeps them hidden in a thicket for two or three days, until they are able to follow her about. The female elephant is very fond of her young, giving expression to this feeling by constantly stroking it with her trunk. She keeps it with her for several years, and fiercely defends it against intruders.

Most rodents prepare for their offspring before birth takes place. Rabbits, for instance, live in communities in burrows; the females dig circular chambers off the main burrows, lining them with leaves, soft grass, and fur plucked from their own

W. S. Berridge, F.Z.S.

FIG. 47.—WALLABY AND YOUNG.

Photo by W. Saville-Kent, F.Z.S.

FIG 48.—KOALA, OR AUSTRALIAN NATIVE BEAR AND YOUNG.

Photo by Saville-Kent,

FIG. 49.—AMERICAN WOOLLY OPOSSUM.

Only in the opossums are the young carried after this fash

(From "The Infancy of Animals," by W. P. Pycraft.)

asts, to make a warm home for their young ones. irrels construct nests for the winter and store visions. Rats and mice, too, make nests, collect- quantities of soft material, such as wool and ags, arranging them in a hole. The harvest-mouse constructs an elaborate nest out of narrow grasses woven into a globular shape and suspended upon firm blades of corn. In rodents the number of young at a birth varies from two to as many as twelve. They are born blind, naked, and helpless, and depend upon the mother until they are almost full-grown. Not only do the males not provide for their young, but they even attack them sometimes. The beavers are the most intelligent of the rodents, and therefore the young remain long with their mothers; for, as we have seen, the higher the intelligence, the longer the period of infancy. They are born naked and blind, and have special chambers built for them. After birth the mothers suckle them and keep them warm for months. In six weeks they are able to follow her about; but she keeps them with her for two years, teaching them all that is essential to the well-being of a beaver, and also how to work with and for the community.

The insectivores, to which the hedgehog and mole belong, also prepare nests for their offspring. The former constructs a nest out of moss and leaves, placing it so that it is sheltered from the rain. The family consists of four or five at most; they are born quite helpless. In a week or two they are able to nove about, and the mother teaches them what is be their food.

We are all familiar with the examples of parental

affection exhibited by the carnivores, such as the cat and dog tribes. The duties of parenthood generally fall on the female, the male taking little interest in the young. For a certain period, which varies with each species, the young are very helpless, so that the mother is hardly able to leave them at all, except at intervals to search for food. She suckles them a comparatively long time, and they remain long with her. She shows every sign of affection, nursing them, and even playing with them. Carnivores generally have a lair for their young in a well-concealed place, which is kept very clean. The young, too, are kept very clean, the mother licking them with her rough tongue until they have learnt to do this themselves. If the cubs wander away, the mother carries them back in her mouth, picking them up by the loose skin on the back of the neck. An exception is found in the Polar bear, who carries the cubs under her arm, and also in some carnivores living in trees. The mother (and sometimes both parents) teaches the young to stalk and hunt prey, and also how to kill it. Polar bears teach their cubs to fish and to swim.

An aberration of parental care is sometimes found among carnivorous animals; they are in the habit of eating the afterbirth, and it happens occasionally that they devour their own young; this is also known to occur in the case of the pig.

The apes and monkeys approach very much nearer in type to man. Their period of gestation is one of the longest known among all the animals, and the corresponding time of suckling is also much lengthened. The young are born very weak and helpless,

and it takes, as a rule, a few years for them to reach maturity; in this respect they resemble the human child. The number of offspring is hardly ever more than one a year, and the higher apes have even more than a year's interval between the successive births. The teats of the female monkey are situated on the breast, just as in the human female; the little ones are therefore held to the breasts of the mother in almost human fashion. In the lemurs, however, the young one lies across the mother's abdomen and curls its tail around her loins. When the young monkey is old enough, it climbs upon its mother's back, and is borne there for many months. The monkeys bring up their young with tenderness and care, fondling them and showing every sign of great affection, almost like human beings. The mothers also keep them clean, grooming them and freeing them from parasites. There seems to be some doubt as to the parental care bestowed by the male upon his offspring, but it is known that both male and female defend the young with the utmost bravery. It has also been asserted that the male orang makes a staging of boughs and leaves for the female to sit on and suckle her young, while he watches over their safety from another similar resting-place. The family group of the highest species, the gorilla, consists of both parents and one or two young of different ages, the elder being sometimes as much as six years old. This shows how long the care of the young lasts in the higher apes, and how closely it approaches the parental care in man.

2. Parental Care in Man.

We reach an altogether new phase of parental care when we come to the rearing of the young among human beings. It has been seen that in the courtship and mating of man the conscious element plays a great rôle, whilst instinct retires somewhat more into the background. The same may be said of parenthood: it has become part and parcel of the conscious activity of Man. The period of gestation is longer in Man than in any of the animals (with the exception of the elephant, whose enormous bulk may account for this). Now, though pregnancy is a physiological process, still a good deal of deliberate attention is given to it even among primitive people, as we have seen in a previous chapter. This makes for the greater safety of the ensuing progeny. The period of infancy is also very long, suckling alone being carried on, at least among the lower races, until the child is a few years old, since it is impossible for savage people to get suitable food for very young children. A baby cannot walk until it is a year old or more, so that it must be carried about. As many mothers, especially among uncivilized people, must work very hard and have no spare time to nurse their babies, they have to contrive some means of keeping the children with them wherever they may be. In some tribes, as, for instance, the Kalmucks, the babies are always kept wrapped up in a sheepskin, lying on the ground, the mothers only carrying them when moving to some other place. In some of the wild tribes of Asiatic Turkey the newborn child is first bathed, then wrapped up in a piece of

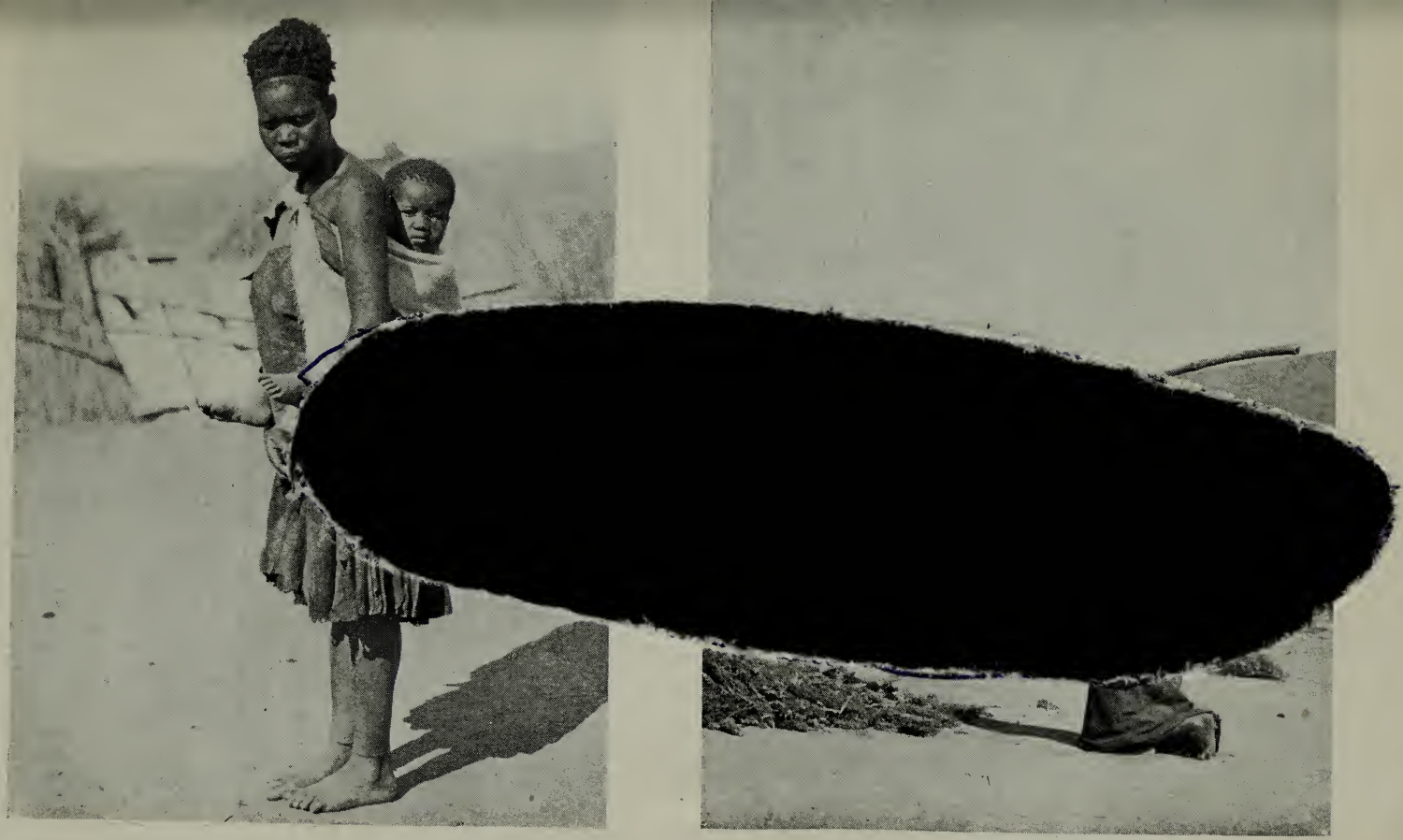


Fig. 50.—Swazie Mother with Child.

Fig. 51.—Zulu Woman with Child, Threshing Corn.

(From "The Essential Kafir," by Dudley Kidd.)

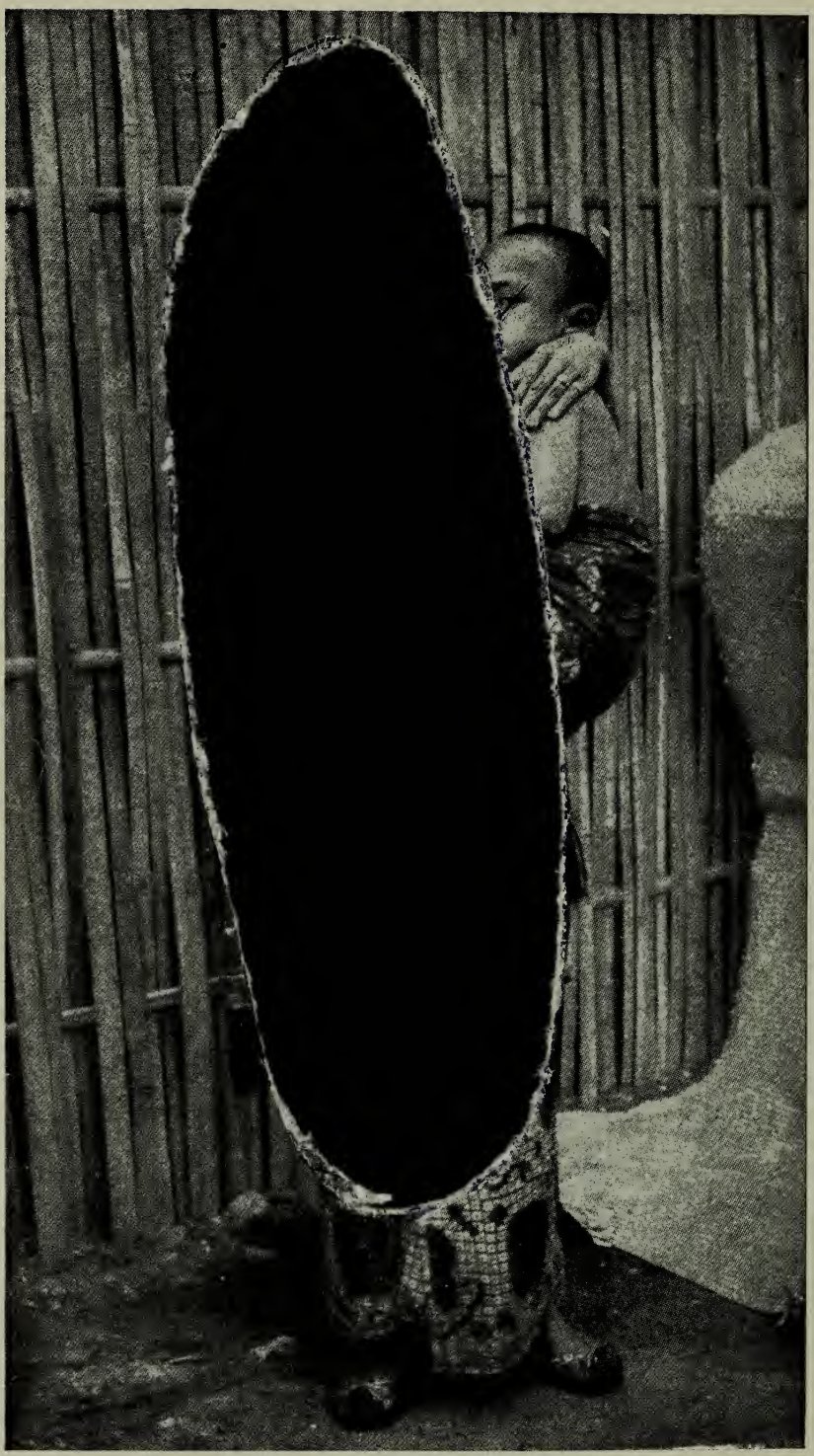


FIG. 52.—WOMAN OF JAVA, WITH BOY.

(From "Das Weib in Natur und Völkerkunde," by H. Ploss.)

coarse linen or woollen stuff and placed in a pit, which is prepared by the expectant mother before her confinement. The floor of the pit is strewn over with fine earth and sand; the baby is then placed in the pit, which is filled with earth, only the head remaining exposed. This is repeated daily.

The most usual way of keeping the child with the mother is to have it suspended upon her back in a strong piece of cloth or skin, or in a basket (Figs. 50 and 51). This was the custom of many ancient races, and is still prevalent all over the world. The child is quite safe in this improvised cradle, so that the mother can attend to her labours without any hindrance. Older children are often carried sideways on the hip of the mother (Fig. 52). Another mode of transporting a child from place to place is for the mother to carry, on her head, the cradle or basket containing one, or sometimes even two, infants (Fig. 53). This may be seen in some parts of Europe as well as in less civilized lands. The children are quite safe, for the women in these countries, mostly hilly districts, acquire considerable skill in carrying loads balanced on their heads. A quaint contrivance is to be found among the Eskimos, where the mother wears high, roomy boots for the winter, lined with soft warm material and stiffened out with whalebone to the required width (Fig. 54). The babe is put into the top of these boots, with only the little head peeping out, and thus is carried about with its parent. This strikingly reminds one of the penguins carrying their young on the foot, with a natural covering to keep them warm. The Red Indians of North America

bind their babies to a flat board, with a slight support for the head; this is thought to insure straight limbs.

FIG. 53.—SWISS MOTHER CARRYING CHILD IN CRADLE ON HER HEAD.

(From Ploss, "Das Kleine Kind.")

Similar customs still exist in Europe, women putting their children into swaddling-clothes, which allow no

freedom of movement. It need hardly be said that this rather hinders than aids the growth of the child.

The care given to the human infant, so much greater in comparison with the animals, lessens considerably the loss among the young, though we find even here that among primitive races the destruction is large and often deliberate. The rule still holds good that

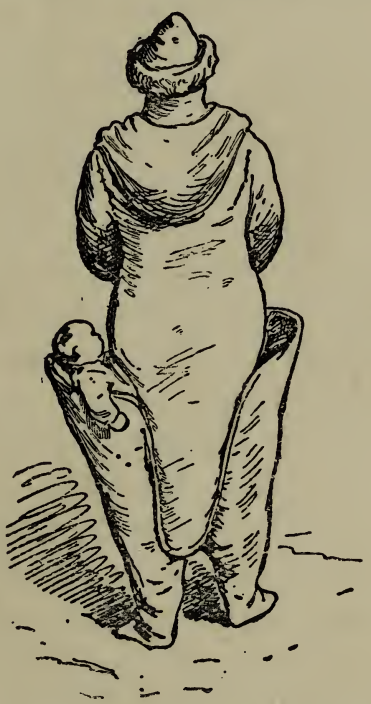


Fig. 54.—Eskimo Mother carrying Child in Big Boot.

the lower races produce more offspring than the higher. But even in the lowest races a girl is not sufficiently developed for child-bearing until after her tenth year; early as this may seem compared with European nations, it is late compared with the animals. The fertility is lessened not only by the longer period of pregnancy, but also by the prolonged suckling among primitive races. Seemingly, however, the number of

offspring born is still too high to be kept alive; the result is that we find the killing of children before and after birth very prevalent in olden times, and among primitive races even now. It must by no means be deduced therefrom that this is evidence of deficient parental affection. On the contrary, there is abundant proof that people who adopt this gruesome practice are yet very fond of, and kind to, their surviving children. As Tylor says: "Infanticide comes from hardness of life rather than from hardness of heart"; and he continues: "The parents will often go through fire and water to save the very child as to whom they were doubting a few weeks before whether it should live or die." It is sometimes extremely difficult for a savage to find food enough for himself, so that it is hardly to be wondered at if he shirks the impossible task of supplying many mouths, and tries to avoid it by killing off additional newcomers. There may also be a dim idea in his mind that he will save the child future suffering by disposing of its life at the very outset. Among the nomadic tribes, besides having the hardship of finding sufficient food, the parents are faced with the difficulty of transporting children during their wanderings. Thus we read that among the Queensland blacks scores of babies were slaughtered yearly. When the tribes were marching, each woman carried everything belonging to the family; if she was overburdened, the first thing to be cast away was her child, since her husband's wrath was tremendous and its consequences disastrous to her if she dropped any of their belongings. Among the Australians a woman is taught to consider it wicked to burden the

tribe with more than three or four children; and it is also regarded as a mark of selfishness in her to give way to her maternal instinct, which might influence her to save her child's life. It should be noted, however, that the baby is killed immediately after birth, before parental affection has become too powerful. If a child has been allowed to live a few weeks, its life is generally safe. The Dyaks often destroy deformed or idiot children. Among the Eskimos, if the mother dies and no woman can be found to nurse the child, it is painlessly put to death. The killing of one or both of twins has already been alluded to in a previous chapter.

Infanticide was practised by most of the peoples of ancient civilizations, such as, *e.g.*, those of Persia, Babylonia, India, China, etc. In China it still exists, or did so until quite lately, although prohibited by law. Until recently, the same was true of India and Japan. The ancient Roman and Greek law also permitted infanticide. The public sacrifice of children for religious purposes existed in Rome so late as the time of the wars against Carthage. In Greece the children were killed by exposure; for public opinion was against the direct shedding of blood. Among the Spartans, however, if a child survived this trying ordeal it was allowed to live, having given proof of its power of endurance. Aristotle laid it down as a law that no imperfect or maimed child should be brought up. There is a similar utterance from the mouth of Seneca, a Roman philosopher, who said: "Children if weak or deformed we drown, not through anger, but through the wisdom of preferring the sound to the useless." Many uncivilized peoples

also expose their children, granting them life if they survive. The same explanation, that no weakling should be allowed to exist, is given by them. The Maoris expose the newborn child for a certain time under the shadow of a tree. In many tribes it is watched and guarded during this time; in others it is left to chance. No one may touch the child, for it is made *tapu* (taboo); a carved or painted pole, hung with flax, rags or bones, is stuck in the ground near it to warn intruders. If the baby survives, it is taken to the mother's breast and is at once recognized as a member of the tribe.

Many instances of infanticide, however, are more in the nature of religious sacrifices. We have seen that the custom existed in Rome. A relic of it is seen in the story of the intended sacrifice of Isaac by Abraham. It was sometimes the firstborn son that had to be sacrificed to the gods; but this custom later became mitigated, the eldest son being bought off, at first by the sacrifice of animals, and still later by other offerings.

Remembering what has been repeatedly said before as regards the depreciation of woman, it will not be surprising to find once more that frequently less value is attached to the life of girls than to that of boys, so that the infanticide of girls is much more prevalent than that of boys. Boys are always needed to increase the number of warriors when they grow up, and also to continue the tribal religious worship, whilst girls cannot fight and may need dowries. Some Hindus, on being reproached by Europeans for their cruelty in burying alive their newborn girls, replied: "If you pay us their dowries

we will let them live." The lot of the Hindu women is very hard, so that they are willing to drown their daughters in the holy stream rather than that they should grow up to the same life. The British Government attempted to put a stop to this gruesome custom by the Infanticide Act of 1870.

Even among people who do not kill the girls, we find that the birth of a daughter is very often considered a great misfortune. Among the Georgians, a woman who has only daughters hardly ventures to let herself be seen, but if she gives birth to a son there is great rejoicing. In Montenegro, if a daughter arrives the father stands on the threshold of his house with eyes downcast, as if he were begging pardon of his friends and neighbours. If several daughters are born in succession, and there is no heir and future soldier, the mother must call together seven priests, who sprinkle the house with holy oil; and the threshold must be replaced by a new one, in order to purify the house that has been bewitched by evil spirits on the wedding-day. Many races, as, *e.g.*, the Arabs of Algeria and Tunis, celebrate the birth of a boy with many days' festivities; but the advent of a daughter is quietly passed over. Even among modern civilized people, boys are more wished for than girls. We find an expression of this in the prevalent custom of announcing the birth of a prince by a greater number of cannon shots than the birth of a princess.

There are, however, exceptions to this rule, many tribes rejoicing more at the birth of a girl than of a boy. The Dyaks of Borneo pray for a girl first, because she is useful. The inhabitants of the Aru

Islands joyfully welcome the arrival of a daughter, because when she marries she will bring her parents a high purchase-price, which is shared by all who were present at her birth. If a boy is born, the mother is often reproached for not having a daughter, and the guests go sadly home. A girl is often betrothed as soon as she is born, and the bride-price agreed upon. The Kaffirs and Hottentots also welcome the birth of a girl, since every daughter represents an increase of fortune to the parents when she marries. The more daughters a man has, the more cattle he will receive from their suitors. This preference for girls is carried to the extreme in some African tribes, where the boys are killed and not the girls.

With the growth of civilization, the practice of infanticide becomes reprehensible and falls into disuse, being often commuted into the sale of children, especially of girls. In Rome, it had become a well-established custom for mothers to abandon their girl babies at the foot of a particular column. From there some of them were taken by men to be trained for immoral purposes. This at least eased the mother's conscience. Sometimes the parents reclaimed their daughter if they thought she would become useful to them in any way. The practice of selling children existed in medieval England; for we read of bishops threatening parents with excommunication if they sold their children. In Japan, the Government bought girls from six to eight years old and trained them as geishas (dancing-girls). Similarly, in Siam the parents sell their daughters to managers of theatres.

But the sale of children also died out gradually in all Western countries, as people grew more civilized. With the limitation of the father's power to do with his children according to his will, the family bond became stronger, and children were more intensely appreciated for themselves, apart from their marketable value. As there were no children to be disposed of now by exposure or sale, the total number of children born to each family gradually lessened. Even then we find that there are still a greater number of children born than can be reared, especially in backward countries. Here the number of children per family is greater than in those of more advanced countries; but it has been found that wherever the birth-rate is high, as, for instance, in Russia, Egypt, India, etc., the number of deaths among children is also considerable, so that in some districts barely one-half of the children born survive beyond their sixth year. This rule also holds good in a modified way for more civilized countries. Thus there is unmistakable evidence that among the poorer classes, which have generally large families, child mortality is comparatively high; while among the richer people, who generally have fewer children, the loss is proportionately less. It is quite clear that there is a connection between these two facts. Children need great care, especially in their early years, and it is impossible for any person to give them the necessary attention if they follow quickly one after the other. So Nature in her cruel way weeds out those which cannot struggle against the adverse conditions due to poverty. It is naturally easier to rear and provide for a few children with limited means than a

great number. It is less wasteful to have four or five children and keep them, than to do as the notorious charwoman, who in her pride boasted: "I surely ought to know all about children, for I've had ten and buried eight." And her case can hardly be said to be very exceptional. We have become too sensitive to, and conscious of, the value of human life to be proud of the mere fact of producing live-stock. What we wish is to keep our little ones with us once they are here. Such an ideal implies a considerable step forward in the elimination of human waste. But not only are we desirous of keeping them, we are also more anxious than ever before to give them every chance of health and happiness, and to give them a fair start in life, so that they may have its full benefit.

Our age has rightly been called "the century of the child." We are only beginning to wake up to the fact that on the children depends the future of the world, that as *we* sow, so *they* shall reap. Not only do we desire that the younger generation shall be given full scope, everyone according to his ability; but also that the future race shall be born with a good initial share of it. It is for this reason that a new movement has arisen among more enlightened people against the propagation of bad stock. In olden times, we have seen, weaklings were killed by exposure, as is still done by primitive peoples. Cruel as it seems, there was some justification for it: it prevented suffering to the individual and relieved society of the burden of useless members. With time, however, the human conscience revolted against such a savage practice, with the result that

not only the good, but also the bad, were allowed to multiply. Now we have once more come to realize the necessity of ridding society of its dregs (by no means always belonging to the lower classes); but instead of killing the unfit, it is now proposed to prevent them from perpetuating their kind, so as to propagate only from the fit—that is, the best. People are gradually learning that it is a crime to burden a child with a bad inheritance, such as a tendency to consumption, insanity, epilepsy, etc.; and that it is better for such children not to be born at all. In other words, eugenics, or the art of breeding good stock, is becoming an established creed of the time; not only do we wish to cure ills —which has been done at all times—but we have become wiser in trying to prevent them. Besides endeavouring to provide the best possible environment for all, we must help to improve the race itself by seeing that everybody is born with a sound inheritance. When these endeavours are joined with genuine sympathy and affection, when love is given a truly human form by eliminating all suffering, waste, and unhappiness, it is then that Life's promise in its wonderful growth through courtship, marriage, and parenthood, will reach its highest fulfilment.

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INDEX

After birth, 103, 130
All-Hallowe'en, 45
Amulets, 107
Ant, 62, 112
,, -eater, 96, 97, 126
Anus, 64
Apes, 24, 130

Barrenness, 65
Baths, 33, 52, 53
Bear, Koala, 127
,, Polar, 130
Beauty, 35
Beaver, 129
Bee, 62, 112
Birds, 96, 119
,, Bell-, 19
,, Bower, 21
,, migratory, 129
,, Paradise 20
,, Ruff-, 18
,, running, 119
,, swimming, 120
,, Weaver, 122
Birth, 102, 104
,, mark, 101
,, premature, 100
Blackcock, 20
Blastula, 91
Bride's-crown, 87
,, dress, 86
,, fair, 42, 79
,, maid, 85
,, veil, 86, 87
,, wreath, 87
Brides, mock, 85
Brood care, 113
Brooding, 119
Budding, 57
Butterfly, 13

Carnivores, 130
Cat, 22, 130
Caterpillar, 94
Cattle, 22, 128
Caul, 106
Cell, 56
,, -colony, 60
Child, 69, 85, 132
,, -bearing, 135
,, -carrying, 134
,, mortality, 141
,, sale, 140
Children's games, 42
Chivalry, 54
Choice, 45, 46
Chrysalis, 94
Cicada, 12
Cloaca, 64
Clothes, 38, 50
,, swaddling, 134
Cock, 17, 22
,, Turkey, 17
Cockatoo, 122
Cocoon, 94
Cœlom, 93
Coition, 64
Coitus, 64
Competition, 28
Conception, 90, 100
Confinement, 103
Confirmation, 33
Copulation, 62, 63, 64
Coquetry, 49
Corset, 36, 53
Courtship, 3, 9, 27, 34, 53, 56
Couvade, 106
Crabs, 9
Crawley, E., 82, 84, 87
Crinolines, 53
Crocodile, 15, 118

Darwin, Charles, 4, 8, 13
Dancing, 41
Display, 27, 34
Division, 57

Dog, 22, 130
Dowry, 80, 81
Duck, 121

Eagle, 125
Earrings, 52
Egg cell, 60
Eggs, pelagic, 113
,, submerged, 113
Ejaculation, 64
Elephant, 22, 128, 132
Embryo, 93, 99
Endogamy, 68
Eugenics, 143
Evil spirits, 102, 105
Evolution, 4, 111, 119, 121

Feet, 36, 51
Fertility, 113, 120, 135
Fertilization, 61, 63, 64, 90, 98
Fish, 113
,, Bow, 115
,, Butter, 115
,, Dog, 96
,, Paradise, 115
Flamingo, 125
Fœtus, 99
Food, 105
Foster-mother, 107
Fowl, 121
Fright-stones, 107
Frog, 14, 95, 116

Galton, Francis, 128
Gastrula, 92
Germ cell, 60
Germinal vesicle, 93
Gestation, 98, 128, 130, 132
,, period, 97
Goethe, 45

Hardy, Thomas, 69
Hedgehog, 129
Hermaphrodite, 61
Homer, 40
Horse, 128
Hymen, 64

Immission, 63, 64
Impregnation, 64
Infanticide, 136, 137, 138
Initiation, 29, 30, 37
Insects, 111

Kangaroo, 97, 127
Katydids, 13
Key, Ellen, 46

Labour pains, 102
Lactation, 103, 107
Lemur, 131
Lizard, 14
Love, 1, 28, 38, 46
,, -magic, 43
,, oracles, 45
,, philtres, 44
Lying-in, 103, 105

Magical rites, 84
Mammals, 96, 125
Man, best, 87
,, primitive, 34
Marriage, 55, 64, 65
,, broker, 38
,, capture, 73, 74, 75
,, ceremony, 83
,, child-, 70
,, purchase, 77, 78, 85
,, rites, 82
,, sacramental, 86
,, seeular, 87
,, tribal, 67
Marsupials, 97, 126
Matches, 39
Maternal impressions, 101
Mating, 49, 55, 56
,, season, 8, 24
Matriarchate, 66
Membrane, fœtal, 99, 106
Menstruation, 29, 31, 33, 103
Metamorphosis, 93
Modesty, 48
Monogamy, 81
Morgengabe, 80
Morula, 91
Moths, 13
Mother cell, 91
,, right, 66
,, rule, 66

Mouse, 129
,, harvest-, 129
Musk deer, 24
Mutilation, 35

Name-giving, 107
Navel, 103,

Nests, 119, 121, 123
Nudity, 52

Opossum, 127
Orang, 131
Organism, multicellular, 56
,, unicellular, 56, 57
Ovary, 60, 63, 98
Oviduct, 98
Ovum, 60, 98
Owl, 122

Pain, 36
Pairing, 55, 65
Parental care, 111, 120
,, characters, 108
,, feeling, 111
Parenthood, 89
Parthenogenesis, 61
Parturition, 103
Pater familias, 69
Patriarchate, 67, 68
Peacock, 15
Peckham, Mr. and Mrs., 10
Pelican, 124
Penguin, 120
Penis, 63, 64
Pheasant, Argus, 15
Pig, 130
Pigeon, 124
Placenta, 99, 103
Platypus, 96, 126
Polterabend, 84
Polyandry, 72
Polygamy, 71
Pregnancy, 98, 101, 102, 109, 132
Procreation, 89
Puberty, 28, 48
Puerperal period, 103
Pupa, 94
Purification, 32, 50, 104
Pycraft, W. P., 9, 15, 124
Python, 118, 119

Rabbit, 128
Races, 40
Rat, 129
Reproduction, 56, 61, 90
,, asexual, 57
,, sexual, 59
Reproduction, virgin, 61
Reptile, 96, 118

Saint Valentine's, 45
Scars, 32, 37
Scorpion, 9
Semen, 63, 100
Sex cell, 60
,, characters, 8, 48
,, glands, 60
,, intercourse, 64
,, organs, 63
,, superstitions, 100
Sexual season, 48
,, selection, 8, 13
Shakespeare, 43
Shark, 96
Snake, 118
Sparrow, 112
Sperm, 60, 63
Spermatozoa, 60
Spider, 9
Stag, 22
Stickleback, 116
Sutherland, A., 114

Taboo, 31, 33, 49, 138
Tadpole, 95
Tattooing, 30, 36
Teeth, 30, 32, 35
Tennyson, 111
Testes, 60, 63
Toad, midwife-, 117
Twins, 109
Tylor, E. B., 136

Umbilical cord, 98, 103, 104
Uterus, 64, 98

Vagina, 29, 63, 64, 98, 102
Veiling, 50

Wasps, 112
Weaning, 103, 108
Wedding gifts, 80
,, ring, 80, 86
Wife sale, 69
Woman, depreciation of, 138
Womb, 29, 64, 97
Woodcock, 124

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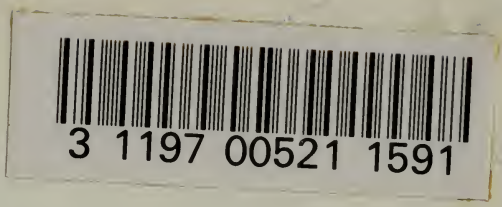
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