

PREMARITAL BEHAVIOUR IN THE CONDOR *SARCORAMPHUS GRYPHUS* L

BY

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As far as I know, little has been published and no thorough investigation has ever been made of the courting, mating, nesting, brooding and rearing of the Condor, though in some of the zoological gardens this largest and in many respects peculiar bird of prey sometimes most successfully bred.

In 1939, 1940 and 1942, a pair of Condors hatched in the gardens of the Royal Zoological Society "Natura Artis Magistra" in Amsterdam. They sat each time on one egg for 58 days alternately. In this way they brought up three young ones, the third of which, however, unfortunately lived only 12 days. It died 9 days after its mother's death. Besides my preliminary notes in former years, annotations and protocols were collected in 343 daily reports on this couple and its breeding, and also on the bodily growth and the maturing of the behaviour of their offspring. In this article only the premarital comportment with its interesting symbolic expression of tendencies and noteworthy interaction between a co-ordinating-regulating principle within the biological psyche and (remaining) vital functions will be described and discussed.

An immature male bird of a still brownish colour, with brown eyes, and a young female with red eyes and already black feathered, came to the gardens 16-V-1928 and were put into one of our former bird-of-prey-cages. These rather small cages were pulled down afterwards and a large aviary (28 × 8 × 6 m.) was built in the same place. Some roosting-trees and shrubs were planted and two shelterhuts were built each with two compartments open at the front. From 4-II-1930 till 19-III-1931 the birds were temporarily kept in other cages and then put into the new aviary. Here they started flying to and fro, venting their affects by interlocking their bills in quite an emotional way. After some time they went to roost in about the same place on which their former cage had stood. In all probability they found their bearings by means of the unchanged surroundings round about the larger new aviary and so did an Indian-, an Occipital- and a Rüppell's Vulture. They stuck to their habitformation for rather a long time.

Insuring the attainment of reproduction, the complex of processes working in intimate functional relation and having for their collective natural goal the successful rearing of offspring, is obtained by a hierarchically welling up and somewhat indefinitely coming to the service of several integrating instincts, the potencies of which are realised by means of innate abilities in the form of nervous arrangements or behaviour patterns. Where the routine-specialised comportment suffices, there no special adaption of the inborn mode of action is made; but where the inborn abilities are insufficient, in special circumstances of the moment, for the attainment of the natural goal of the instinct, there some effort at adaption is made individually.

In birds the discharge of the sexual instinct with its lustful courting, mating and finally its coition, and of the parental instinct, differentiated—according to sub-ordinate vital needs—into a tenderly brooding, sheltering, fostering and feeding, is generally performed in co-operation with many other instincts. These are the migratory and homing instincts, the combative instinct¹), securing a rearing-territory and a protecting of nest, eggs and young ones, the self-assertive and submissive instincts with their positive respectively negative self-display as important components in the courting and mating (serving to bring the pair together and to keep the two birds constant to each other), the constructive instinct, differentiated into a scraping, amassing, nesting and in many cases moreover a carrying of nesting material to the nest from a certain distance, last not least the foodseeking instinct, here coming to the service especially in behalf of the young ones.

A SHORT SURVEY ON INSTINCTS AND INSTINCTIVE ACTIVITY

For a clear psycho-biological apprehension of the matter, an initial abstract may be given on the structure of an instinct and on its essential role in the actions-and-reactions of an individual.

As I amply pointed out (1948), instinctive behaviour is more than a train or chain of reflexes resp. automatisms, of mechanical responses to physical resp. chemical stimuli. *In the "total" behaviour of an individual these elementary stimuli just borrow their driving power from the instinctive dispositions in the organism.* Moreover polarity of correlating psychical and physiological processes in the individual as a whole is revealing causality as well as finality, the activity of an organism being caused and directed, in connection with vital needs or wants, upon a biological goal, which can be reached by means of objects or objective situations, appropriate to appease the raised need and being characterized by some configuration of stimuli, having a certain "meaning" (STOUT; LLOYD MORGAN, 1900) for the "appetitive" individual in question.

Now instincts are thinkable as fundamental psycho-physical potencies, integrative primordial factors or indispensable momenta (yet not atomistic "elements"!) of the biological psyche. The latter may here be defined as the whole of "many-in-one" organised

1) "To resent and forcibly break down any thwarting or resistance offered to the free exercise of any other tendency" McDUGALL, 1932.

functions, necessary to the existence of a living individual as a psycho-physically structured totality.

In a whether or not (yet) conscious animal *the unconscious psyche is a well-defined group of functions with its proper lawfulness*. It is observable objectively, apart from introspection, as a form of psychical research serviceable of course only in human psychology. All phenomena we may observe either directly or indirectly and study comparatively in the behaviour of conscious or not conscious men and animals, acting-and-reacting as wholes, are symptoms of the working of an unconscious biological psyche, being in force as an organisatrix, constantly bringing about an actual psychical ordering of physiologically given order and restoring in this way the labile natural equilibrium, the broken harmony between internal factors mutually and with respect to external ones. This is not only made probable by comparative psycho-biological investigation, but is also and unmistakably made known by medical psychology, patho-psychology, psychotherapy and psychiatry. Physiological functions in the co-ordinated organ-systems play their necessary parts in the impulsive psycho-physical acting-and-reacting of the "striving" totality, i.e. in the animal or human Person (STERN, 1945), operating with its bodily structures and *having* as well as *being* a body. In the psycho-physical state of a goal-seeking, that is to say: "seeking" and "choosing" individual—i.e. in its "subjective" natural striving—elementary (physical or chemical) stimuli cannot be the true, essential *causes* but must be considered as the indispensable *conditions* for the welling up of *psychically directed energy*. The elementary stimuli-configuration (McDOUGALL), "Imago" (FREUD), "Gestalt" (KÖHLER-WERTHEIMER) causes in the appropriate organ—which is as a matter of fact not perceptive but deceptive, that is to say accessible to "adequate" stimuli—an in- resp. externally excited physiological process. In correlation with this, a "total", psychological process is set to work and, in case of a felt need or appetite, a psycho-physical "readiness" or "mood" for a special purposive behaviour is teleo-causally aroused in relation to some perceived configuration of stimuli in the natural environment, with which an animal is making up a practically determined whole or unit. This purposive behaviour is obviously performed with a regulative interplay of objectively excited emotions, qualified subjectively by special feelings pleased or displeased, as is indirectly observable in emotional expressions or affects, accompanying the sensorimotorial goalseeking. The affective state or "mood" of the individual is giving a special colour or value to the "totally" wrought out actions- and-reactions, upon which it is constantly irradiating. Moreover some degree of dim awareness may be helping to ensure the successful co-operation of impulses, concerned with the elaboration of the "personally" performed activity. It raises the physiological processes to the level of whether or not yet conscious psychical "knowing-feeling-and-striving", the more or less successful operation of which is enregistered and retained by mnemical function in the individual. Perceptive-appreciative goalseeking of animals, which do by no means understand the vital meaning or biological value of their *purposive behaviour*—as in contrast with *purposeful conduct*, the conceptual behaviour of self-conscious human beings—must be *distinguished* but may not be *severed* from human voluntarily performed striving.

A gradual and even fundamental difference is existing between psychical behaviour and noetical conduct. ("Identity of a difference which remains different"). In an acting-and-reacting organism individuality emerges as a regulating instance, continually bringing about *psychical ordering* of *physiologically given order*, moreover calling into existence (either gradually or by mutation) a *continuous differentiation, centration and integration of functions*, forming qualitatively new structures according to raised secondary vital needs. If necessary, integrations are broken up and disintegration is followed by re-integration, in so far as the vital or psychical motion (which has nothing to do with "vitalism"!) is not too much stiffened into secondarily formed mechanisms and "automatisms" (behaviour-patterns) of a more or less overspecialised organisation. Psychical function of the organism as a whole at any rate takes part in all organic functioning. "*Dem strikten Reflexbegriff entsprechenden Beziehungen sind nirgends beobachtbar*" is a home-going remark of the ... physiologist GOLDSTEIN (1936). Interaction must be conceived not as between "body" and "mind" but between a co-ordinating-regulating principle within the psyche and vital functions. *The primitive "seeking" and "choosing"*

of natural goalstriving, unconsciously regulated in the outset, must be considered as the essential and central phenomenon and problem in all "subjective" purposive behaviour, animal or human. It works specifically structured in the primordial instinctive dispositions and more or less mechanised in the secondarily framed reflexes, automatisms and reaction patterns, which make up sub-ordinated constituents in the total acting-and-reacting (COCHILL 1929) which is often amply differentiated and integrated historically by organizational as well as by functional adaption.

In these geno-phenotypic structures secondarily "split off" self-reliant psychisms, appeasing sub-needs, may work more or less autonomically but never completely loose their relation with the totality.

The mnemical enregistration of such "historized" chains of behaviour can be so thoroughgoing, that it approaches mechanisation. Yet, as e.g. VERLAINE's experiments with very young wasps (1924) and with spiders (1933) and my results with nightjar's and kingfisher's nestlings (1922) have taught, the primordial plasticity and adaptivity of instinctive forces is still revealed in early periods resp. vital circumstances, in which behaviour is not yet "got into a groove" and fairly well "calcificated" in mechanisms. Besides the possibility may occur that the physiological concatenation is dimly shot through or irradiated with unconscious (resp. already to some extent conscious) awareness and backed by endeavour (PORTIELJE, 1948), though purposive animal behaviour may come to a wrong end by lack of adaptive plasticity resp. more or less intelligent adaption. Then the "bomb" of an instinctive disposition, fit by nature for the final purpose but partially, explodes ineffectively. Thus *instincts* as fundamental impulses, geared to cognitive-affective-conative *abilities* in relation to well defined *biological purposes* and in respects of *objects* or *situations* responding to *vital wants* or *needs*, which are individually felt or lived as *appetites* and appeased by goalreaching *impulsive strivings*, may be considered as latent integrative functional units, as innate engram-complexes; this in good conformity with McDUGALL (1933, 1935, 1936) resp. BLEULER (1925).

In the Vertebrates they have their neural basis in centres of the brainstem, especially in the hypothalamus. They get activated by internal resp. external constellations, generating the welling up of a more or less intense *drive*, indirectly observable in the *comportment or attitude of the individual as a whole*. Impulsive strivings either co-operate, even integrate, or—in case of antagonistic instincts—may drive out one another in ambivalent states, in which a "personal" conflict is rising in the individual. The drive is performed by way of *cognitive-affective-conative abilities*, coming into action simultaneously and developed im- and explicitly in constant interaction with each other and with the environments. So an *instinct* is thinkable as a latent drive, a released *drive* as an instinct in action, an *ability* as a structural system by means of which the potency of an activated instinct is realised, a felt need or *appetite* as the subjective equivalent of an achieved natural goal, the *goal of a drive* as the objective equivalent of a natural need or want appeasable with the help of an *object* or *situation* meant for the drive by nature.

ALGESOGENE MOTORIAL EXPRESSION

As the earliest visible manifestation of some internal (obviously hormonal) organic change and awakening of instinctive dispositions, integrating in the reproductive cycle, I could observe in the male Condor a temporarily welling up of hostility towards the Vultures and Golden eagle; meanwhile now and then a peculiar looking around more or less cravingly, followed by a continuous rubbing of the head and bare parts of the neck against a trunk, lying on the ground, against an upward branch or along one of the sides of the shelterhut, in a corner of which a broodingplace was chosen later on. This restless rubbing, which seemed to give away a certain excitement, was exhibited

especially in the very beginning of the premarital period, when a radical change in the mode of behaviour might be on the verge of breaking out.

It also drew my attention, however, at certain times in the breeding period e.g. when the ♂ (who normally takes the initiative, being the more active, expender of energy, whereas the ♀ is the more passive, conserver of energy, waiting for its partner) tried to break up the cycle, or when in one or both of the parents ambivalent resp. antagonistic impulses were aroused in relation to the nearly grown up or full-grown young one.

In my opinion this slightly "alarming" rubbing had certainly nothing to do with itching, for in that case the birds would have immediately scratched the itching spot with one of their feet. Moreover I never saw such a slightly conspicuous rubbing performed as an explicit ability of the comfort-instinct, i.e. the impulse to remove oneself from whatever causes bodily discomfort.

Another more or less alarming way of behaving was a continually repeated purposeless taking up and laying aside of little branches or of pieces of bambusa-stems, which behaviour struck me for the first time in the ♀ but later on also in the ♂. It might not be taken for nesting, for in the Condor, as well as in other Cathartidae (PORTIELJE, 1919), no nesting at all is performed, only removing of an egg is expressed symbolically at times, and the birds are brooding and rearing on a bare ledge of rock, perhaps also in some rocky hole. It might be analogous to the repeatedly throwing aside of straws, twigs, branches, pebbles, feathers which I observed for the first time in the *Rhea*, even in the female bird, which does not nest at all. For the rest it is produced by *Laro-limicolae* and *Anseres*, where, however, all things considered, it may occasionally be interpreted as a symbolic resp. a sparking-over nesting ("Übersprungbewegung"; KORTLANDT, 1940; TINBERGEN, 1940) and even may develop into a real nesting. Both these forms of preliminary activity, i.e. the head-and-neck rubbing and the restless taking-up-and-laying-aside of pieces of branches, in my opinion are subjectively caused motorial expressions, revealing an inner disturbance, vented in purposeless random movements, which, though more or less co-ordinated, are incidental non-specific consequences of a still vaguely felt or lived access of energy, that is disengaged in the nervous system and as yet merely spills over into some motor-mechanism, producing movements, which do not argue a direct and definite striving towards any goal. Apparently the individual, being thrown out of its psycho-physical balance by a still insufficiently rising or an objectively still impracticable impulse, being not yet able "to get its (hypobulic) will", seeks to release itself anyhow from tensions, which disturb the labile equilibrium in the natural "person", i.e. the harmony of inner factors among themselves and with external momenta.

We have to reckon here with a kind of self-regulation of the organism in the sense of "syneidesis" (VON MONAKOW and MOURGUE, 1928) and in an incidental form, for which I (1948) suggested the term *algosogene motorial*

expression ²⁾). They have to be conditioned physiologically and evolved psychically, moulding into form and expression an aroused affective state, qualified by displeased feeling (as contrasted with the frisky *hybriogene motorial expressions* ³⁾) for which the individual must seek relief, finding an outlet for them in the psychically regulated and more or less cravingly exhibited motorial expressions mentioned above. These vague, purposeless motions should not be taken for instinctive symbolisations no more than for "sparking over" or rather "displaced reactions", as will be seen afterwards.

INSTINCTIVE SYMBOLISATION OF THE FUNCTION

In the once *maturing* and periodically *re-awakening and developed* premartial behaviour, but still later on in the breeding period *instinctive symbolisations* ⁴⁾ (PORTIELJE, 1948) were displayed and took an important part in the development of subsequently generated activities of the reproductive cycle, awakening under constant regulation of the endocrinium.

"*Symbolic expression of instinctive forces drags them out into the open, differentiates them and deliniates them*" to quote WHITEHEAD (1928).

So in our Condor ♂ sexual display arose at first (at times also later on in the breedingperiod) without co-operation of the ♀. The first purposive "total" action, directed (by nature) upon an "adequate" object and — if the natural object was wanting or still unresponsive—performed in the shape of "seeking" and "choosing" a representative constellation upon which the drive could be attached and the discharged energy could be vented, was produced as whether or not objectless symbolisation of the function.

Sexual display is an integrative masculine comportment in which the self-assertive and the sexual instinct are co-operating and the assertive component grows into impressive, preliminary action, preparatory to the mating and leading up to coition. The formation of a pair by means of "sex-appeal", makes up the greater part of the courting and mating, bringing about the satisfaction of each others company without interference of masculine or feminine rivals, which are eliminated by aggressive chasing. It cannot lead up to successful copulatory action-and-reaction without a certain dominance of the ♂ over the ♀, which has to be intimidated more or less, exhibiting female submission towards male assertion.

We have to make a distinction between sexual display, as a complex action-

2) From the greek algos: displeased feeling.

3) From hybris: overboldness, recklessness, boisterousness.

4) Instinctive symbolic expression was signalized and studied by me since 1925, firstly in several birds, later on also in mammals and fishes. It is amply discussed in the 4th edition of my book (1948) and a great many examples are described. The name was given because of an original resemblance of instinctive symbolization in animals with the human dream- resp. neurotic symbolizations, which are likewise moulded into form and expression by the unconscious biological psyche, at least at the outset.

and-reaction, and pure self-assertion, in which positive self-feeling is exhibited—whether or not consciously—in self-display. The self-assertive instinct (McDOUGALL, 1936) to dominate, to assert over or display before a social partner has for affective aspect the emotion of positive self-feeling, as in contrast to the submissive instinct, with the emotion of negative self-feeling, exhibited in negative self-display. Both instincts can play their parts as components of the gregarious, of the combative and of the sexual instinct. In the premarital period an awakened hostility of the ♂, having to do with territory-securing, was shown towards the vultures and golden eagle in an aggressive chasing, in which sometimes the ♀ too took part now and then afterwards, so that these birds were taken out so as not to run any risks. Self-assertion functioned here in integration with the combative instinct with the stir of anger-emotion. Preliminarily to the fighting the ♂ or ♀ Condor fully raise themselves imposingly with somewhat opened and uplifted wings and wide opened beaks, uttering a blowing or hissing sound, introductory to sallies of the bills, directed upon the feet and wings of an adversary. In sexual display however the male bird with widely spread wings raises himself imposingly in an almost vertical line, with extended, proudly curved and slightly swollen neck, so that the lower bill almost touches the chest. With trembling throat and belly, quickly moving his obviously yellowish tongue up and down, whereby showing a blurring, coughing movement of the muscular region at the back of the bill and of the throat, he blurts out at full stretch a rather rapid “clucking”, sounding like a rumbling “took-took-took-took-took-a.s.o.” at a quick rate and in a soft staccato. Over and over again he is turning to and fro, in a curious, stately way, with bent neck and widely extended wings. The bare, dull reddish-grey parts of the head, with its large, erect, fleshy, male caruncle, likewise the long, bare, dull-reddish neck, the skin of which is ordinarily wrinkled into many folds and developed into a wattle on the throat and a smaller one on the bare, pink, lozenge-shaped spot at the upperchest, now somewhat distended, turn into a bright yellow, showing some 6 or 7 lines at the back of the head and along the upper part of the strongly curved neck⁵⁾. This adorning, shiny yellow of the bare head and neck, separated from the body by a ruff of white down, is contrasting strikingly with the plumage, which is glossy black, with the exception of the white edges of the wingcoverts and of the white secondary wingquills. The action ends in a snorting sigh.

This masculine self-display, exhibited in a gravely sauntering, is fulfilling a preparatory function in the complex sexual comportment as the bringing together and the near approach of two individuals of opposite sex; stimulating dominance of the male over the intimidated female, in order to further the operation of the sexual drive in its copulatory part, i.e. the discharge of the

5) In *Polyborus tharus* Molina, in the male as well as in the female, in case of anger- resp. lust-emotion the rosy cere and bare parts of the face likewise turn into a bright yellow.

reproductive cells in such a way that they come into near neighbourhood of one another. The impulse of selfdisplay in the male bird has to be attached to a responsive female, as the corresponding object of the drive, but in the beginning it was performed however in a strikingly incomplete way.

As a component in the startingposition of the courting and mating, finally leading up to copulation, it was realised at the outset in an *objectless symbolisation of the function*, in which only the affective-conative abilities of the integrating instincts came into explicit action, the cognitive (perceptual-appreciative) ability still remaining in a latent state. Now the relation of the affective and conative parts of an ability, forming a nearer functional unit within a triune instinctive disposition, is more intimate than that between them and the cognitive part, which however may not be severed from them. Even the most primitive „taxis” never is a mere perception (altogether an appreciation of sense-impressions) without any feeling (“mood”) and acting! Like the more differentiated instincts it is an integrative, innately organised psycho-physical disposition, consisting of three constituents, each subserving one of the phases in the complete, cognitive-affective-conative psycho-physical process, which, from the point of nervous function and structure, may be called the afferent or sensory, the central or conductory and the efferent or motor parts.

The assertive and sex-instincts, as every other instinct, are not only dispositions to act and to feel more or less specifically, but they are also innate dispositions to perceive or perceptually discriminate the “*sought*” and “*chosen*” natural object of the drive, or rather the “*perceptual configuration*” (McDOUGALL), “*Gestalt*” (KÖHLER-WERTHEIMER) or “*Imago*” (FREUD), which serves as a recognition mark for it, having a certain “*meaning*” (STOUT, LLOYD MORGAN) or (biological) value for the individual-in-action.

In our Condor ♂, expressing its maturing instinctive forces for the first time in a still *unripe* way⁶⁾ by producing an objectless symbolization of the function, the discharged functional unit could not reach its goal and the complex appetite (so the felt need to impose and overpower a female in order to copulate with it) could not come to appeasement, as a final mating and coition failed to come⁷⁾.

6) In the periodically coming to the service of the familial instincts in later years (the once ripened *bodily abilities* as *neural patterns* then being in a life-long readiness for actual use) symbolic expression of instinctive forces is used in an unconsciously regulated way to vent a more or less “dammed up” *drive*. This in case the individual is not (yet) able to realise its potencies in a completely fulfilled striving; either because the drive is still in an unsufficiently developed state or in case a drive, which is already fully developed subjectively and moreover intensely welling up in the individual, is “blocked” objectively, as the “adequate” or rather accessory constellation in the environment is wanting or not at all apt for co-operation.

7) In *Philomachus pugnax* L., where, in my opinion, parental and nesting activity in the ♂ are completely “pressed away” phylo-ontogenetically in consequence of an extreme gregarious over-specialisation, whereas the assertive and sexual instincts in

For sexual behaviour has for its central, connective part the emotional state of lust, exited objectively and experienced subjectively as an affection, qualified by feelings pleased or displeased according to a more or less successful operating and finally reached satisfaction. The affective, emotional state or "mood" of the individual as a whole, certainly does not *cause* but obviously is constantly regulating, stimulating and co-ordinating the drive or the integration of drives (in which emotion or feeling is the affective "reserve" of the conation or striving), helping at full stretch to a successful performing of the actions-and-reactions of the totality, moulded by *functional lust* and leading up to finally reached *lustful appease*. An emotion of lust, qualified by feelings pleased or displeased, must be an inhaerent and by no means superfluous factor in the subjectively brought about "total" or "personal" striving, directed by nature or out of instinct(s) upon its natural goal and objectivated tenaciously and in a plastic way at its necessary vital object. This indirectly turns out to be the case rather evidently in the mimical, pantomimical and vocal emotional expressions, which are accompanying the constantly altering acting-and-reacting of the individual analogous to what happens in our own more or less unconsciously behaviour resp. self-conscious conduct.

Anyhow the incomplete but nevertheless stubborn objectless display of the Condor male must have had some result in the form of a certain "catharsis", relieving the inner tension in the unsatisfied male bird to some extent. For the ineffectually discharged energy might have been used up for the greater part or rather "blown off" ("abreagiert") by the ineffective but nevertheless persisted posturing. In this way the psycho-physical balance in the "upset" individual may as yet have been restored by total or psychical i.e. unconsciously brought about self-regulation.

INSTINCTIVE SYMBOLIZATION OF FUNCTION AND OBJECT BY MEANS OF TRANSFERRING

The heated male however furthermore produced another form of symbolic expression of assertive-sexual display. In this furthergoing activity not only the affective-conative parts but also the cognitive part of the dispositions—remaining in a latent state in the former way of symbolization—came into explicit functioning. The natural "seeking" and "choosing" (as the essential central phenomenon in purposive behaviour) subjectively aroused, now was objectivated and directed upon a representative "symbol" for the natural object. The complex drive was affixed perceptually at this symbolic object by a special form of psychical "choosing", namely by *instinctively transferring* it on something, which, though being fully inadequate, and showing no likeness

the ♂ are realised merely in an excessive objectless symbolization of territorial fighting, posturing and mating, mostly ending in a deadlock (for the promiscuity in this species assures a fulfilment of courting and mating only on the initiative of the Reeve), orgasm might be lived sometimes by the Ruffs without coition (PORTIELJE, 1948).

at all to the natural object of the drive, might however have shown in some respect at least a vague resemblance to the instinctively *sought* and *chosen* perceptible configuration which must be the recognition-mark for the opposite sex and upon which, in case of a felt need i.e. an appetite, the innate cognitive-affective-conative disposition of the activated instinct is directed.

So in the absence of or in case of an entire unresponsiveness of the ♀, the Condor ♂, being driven internally to achieve the first stage of the process of fertilisation, the approach to the ♀, but not having the possibility to perform its action properly, transferred its sexual selfdisplay sometimes on some passer-by, who took an interest in the displaying bird and remained standing in front of the aviary to look at it more attentively. The ♂ in particular transferred its assertive-sexual action-and-reaction on me, when I imitated the rapid "clucking", uttered by the ♂ during its sexual selfdisplay; the more so as besides this I imitated the craving snorting and also the caressingly stroking, which is effectuated by the responsive ♀ somewhat impetuously at the bill and cheeks of the ♂. Here, I will hope, that at least the appetite of the assertive component in the male's stubborn sexual display might have found some inferior satisfaction for lack of the final appeasement of the sexual appetite in the integrative impulse. The craving bird, striving hard but all to no satisfactory end, being checked and thwarted from within and from without, was *psychically* driven to seek an outlet for its moreover slightly "dammed up" (gestuwd) drive in a stubborn posturing, venting its vainly discharged energy by "blowing it off" in a *symbolization of function and object with the help of instinctive transferring*.

Now in the young male appetite and instinctive abilities may have been in a still somewhat immature state. Insufficient welling up of the still more or less unripe drive together with absence resp. uneffectually falling in of the wanted object may have brought about symbolic expression in stead of still unworkable real striving. However years afterwards, in the re-awakening and gradually developing again of mature instinctive dispositions, welling up by poor appetite, it is true, in a not very intense way and towards an object or situation which did not properly fulfil the requirement of the subject of the action, so that the drive was slightly dammed up for being not well executable properly, the same symbolic expression came into being, to vent the in- as well as externally hampered action. So i.g. I observed 29-III-1946 in our adult ♂, after a not very intense sexual display towards our firstborn ♀ (born 25-VI-1939), which moved away, so that the courting act did not lead up to sexual union, a somewhat confused attempt at mounting, lived upon a fallen roosting-trunk, lying near by, after a performed caressing of the trunk with bill and cheeks⁸). Obviously the trunk functioned as a symbol for a female-in-heat.

8) Thus instead of an angry pursuing of the unwilling female, which would have been aroused in case of a strong need for sexual appeasement in the male.

This would have shown a submissive stooping with lowered head, somewhat opened wings and uplifted tail in anticipation of the mounting of the assertive male.

Some perceptual-appreciative configuration of sense impressions, given by the trunk in question, must have worked in some way as a "key" or "releaser", i.e. as the distinctive mark, by which the innate psychism of coition, mechanised for the most part "historically", is activated in the heated male.

So not a mistake but a psychically or "totally" regulated *instinctive symbolisation of function and object with the help of instinctive transferring*⁹⁾ was brought about, in which or whereby the vainly discharged energy was vented

Of course a thoroughgoing analysis by means of experimental investigation, in order to make out the true composition of the perceived "Gestalt" or "Imago", the perceptual structure of which is innately given in the cognition of the sexdrive, would have been necessary from the point of view of ethological or rather "objectivistic" ethological study (TINBERGEN, 1942). Such however was not practicable unfortunately in the circumstances, as no risks could be taken in so rare and valuable a case as an expected Condor-rearing, the more so as our firstbreeding ♀ had died I-III-1942, and we expected the ♂ would come to breed with this young ♀ as soon as this one would have grown into sexual ripeness.

As in contrast with the above-mentioned premarital forms of symbolic expression another more or less explosive form was observed afterwards in the breeding time, which, showing similarity as well as polarity with the former ones, must be distinguished, not separated however from them. In the former a rather poorly rising appetite effects the gradually welling up of a drive, which—being checked sub- as well as objectively because of either unripe or still unsufficiently developed abilities, together with a not attainable resp. unresponsive goal—is slightly dammed up and vented in a whether or not objectless symbolization. In the latter, on the contrary, a strong appetite effects an intense, somewhat explosive drive, executed by means of fully ripe and well-developed abilities, which—being blocked by objective circumstances—is highly dammed up and vented in a more or less impetuously expressed symbolization of object resp. situation, in the transferring upon which an abrupt lowering of the "threshold-value" in the cognitive-affective-conative striving is evolved.

A completely realised sexual display was seen for the first time on 31-I-1932; 11-IV-'34; 11-II-'36; 30-III-'37; 28-I-'38; 21-II-'39 (in which year breeding took place for the first time); 10-I-'40; 2-II-'41; 9-I-'42; 25-III-'44; 22-I-'46. Eggs were seen 27-IV-'39; 30-IV-'40 and 31-V-'42. In the years, skipped in this list of dates, we could not with certainty state the first sexual display. SCHÖPF (1881) reported on eggs of a pair, living in the Dresden zoo since March 1874, for the first time in 1877 and always in April or May; JIRI-JANDA (1937), reported on the finding of an egg on 29-III-1937 and

9) For transferring in animals see BRUN (1946), VON HATTENBERG (1921) and PORTIELJE (1948).

15-III-'38. Symbolic expression of male sexual selfdisplay in the Condor is mostly seen for the first time during our wintermonths. SCHMIDT-HOENSDORF reported (1932):

"Am 30-XI-1932 sah ich frühmorgens unser Kondor ♂ anhaltend balzen". "Dieser an und für sich nicht verwunderliche Vorgang gewinnt seine Bedeutung erst, wenn man berücksichtigt, dass die Balz im XII, also in der Frühjahrzeit der südlichen Erdhälfte, statt fand und dass der Kondor seit nunmehr 31 Jahren sich im Zoo Halle befindet. Das heisst also, das 30 Jahre Gefangenschaftshaltung die "Erinnerung" an den Ablauf der Jahreszeiten in der Heimat nicht haben auslöschen können."

A female not yet able or still not in the right mood to achieve a full sexual response either moves away or turns round and wards off with the bill. I once noticed the ♀, after putting her beak in a childish "food-begging" way — an infantile regression, in which female birds often seek or provoke sexual contact with a whether or not posturing or fondly preening male—into the bill of the courting partner, all at once snatching and twisting the lower bill of the ♂, which freed itself, whereas the ♀ moved away looking back at the ♂ in a rather ambivalent way. Evidently she was in a psychical conflict, in which sexual longing turned to aggression, the upwelling sexual drive being all at once „pressed away" by the more or less obstructed drive to withdraw herself from danger, whereas the combative drive was conducive to the withdrawal of the ♀.

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