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(q.v.). The use of the term, moreover, does not prejudice the discussion of the facts.

Literature: see the indications given under KINAESTHETIC SENSATION. Of special importance are JAMES, *Princ. of Psychol.*, ii. chap. xxvi; PICK, *Die sogenannte 'Conscience Musculaire,' Zeitsch. f. Psychol.*, iv (1892), 161 ff.; JANET, *Automatisme psychol.*; BALDWIN, *Story of the Mind*, 16 ff. See also the textbooks of psychology on Voluntary Movement. (J.M.B., G.F.S.)

Kinaesthetic Sensation [Gr. *κινῆσις*, to move, + *αἴσθησις*, perception]: Ger. *kinaesthetische Empfindung*, (b) *Bewegungsempfindung*; Fr. *sensation kinesthésique* (or *motrice*), (b) *de mouvement*; Ital. *sensazione cinestetica* (or *cinesica*—E.M.), (b) *di movimento*. Any sensation which informs us of the movement of the body or of a part of it.

Here belong sensations (a) other than those from the moving member, such as those of sight, hearing, &c., of the movement, as well as (b)—and to these the adjective 'kinaesthetic' is sometimes restricted—the sensations from the member actually in movement: a group of muscular and other sensation qualities.

The words 'kinaesthesia' and 'kinaesthetic' were first used by Bastian (*Brain as Organ of Mind*, 543). He speaks of the sense of movement, or kinaesthesia, as 'a separate endowment of a complex kind, whereby we are made acquainted with the position and movement of our limbs, whereby we judge of "weight" and "resistance," and by means of which the brain also derives much unconscious guidance in the performance of movements generally, but especially in those of the automatic type.' (E.B.T., J.M.B.)

James has distinguished (a) and (b) as 'resident' (b) and 'remote' (a) effects of movement (*Princ. of Psychol.*, 488, 491, 493). This is useful, since it allows free analysis of the entire set of sensations involved. It is accordingly better to follow James's preference (now expressed here) for 'keeping the word a generic one.' Its advantage appears in the discussion of the KINAESTHETIC MEMORY AND EQUIVALENT (q.v.).

Literature: generally the same as for INNERVATION SENSATION, and EFFORT (q.v.); see also BIBLIOG. G, 2, 8, c. (J.M.B.)

Kind [AS. *cýnd*, nature, from *cýnde*, natural; same root as Gr. *γένος*, Lat. *genus*]: Ger. *Art* (the word 'kind' is also used to translate Ger. *Gattung*, for which see HEGEL'S TERMINOLOGY); Fr. *genre*; Ital. *genere*, *specie*. Before 'class' acquired its logical

signification in Queen Anne's reign, kind was sometimes used for any collection of objects having a common and peculiar general character, simple or complex.

Thus, in Blundevile's *Arte of Logicke*, we read: 'Genus is a generall kind which may be spoken of many things differing in speciall kind.' At other times, and more accurately, it was restricted to the species, or narrowest recognized class, or that which was supposed to be derived from one stock. Thus Wilson's *Rule of Reason* (1551) has: 'Genus is a generall woorde, vnder the whiche diuerse kindes or sortes of thinges are comprehended.'

But before persons who picked their words had become ready to use 'class' as a mere logical extension, they had begun to avoid 'kind,' except when the emphasis of attention was placed upon the logical depth rather than the breadth. Watts's *Logick* (1724) illustrates this. This last is the ordinary popular sense of the word to-day; so that 'of this kind,' 'of this nature,' 'of this character' are interchangeable phrases. J. S. Mill, however, in his *System of Logic*, Bk. I. chap. vii. § 4, erected the word into a technical term of logic, at the same time introducing the term 'real kind.' His meaning, so far as it was determinate, was that classes are of two orders, the first comprising those which, over and above the characters which are involved in their definitions and which serve to delimit their extension, have, at most, but a limited number of others, and those following as 'consequences, under laws of nature,' of the defining characters; and the second, the real kinds, comprising those each of which has innumerable common properties independent of one another. As instances of real kinds, he mentions the class of animals and the class of sulphur; as an instance of a kind not real, the class of white things. It is important for the understanding of Mill's thought here, as throughout his work, to note that when he talks of 'properties,' he has in mind, mainly, characters interesting to us. Otherwise, it would not be true that all white things have few properties in common. By a 'law of nature' he means any absolute uniformity; so that it is hardly enough to assert that if all white things had any property *P*, this would be a 'consequence, under a law of nature,' of their whiteness; for it would be itself an absolute and ultimate uniformity. Mill says that if the common properties of a class thus follow from a small number of primary characters 'which, as the

phrase is, account for all the rest,' it is not a real kind. He does not remark that the man of science is bent upon ultimately thus accounting for each and every property that he studies. The following definition might be proposed: Any class which, in addition to its defining character, has another that is of permanent interest and is common and peculiar to its members, is destined to be conserved in that ultimate conception of the universe at which we aim, and is accordingly to be called 'real.' (G.S.P.)

Kind (in biology) [AS. *cýnd*, from *cýn*, family]. Another term for SPECIES (q.v.), as in the phrase 'each after his kind' (Gen. i. 21 ff.). See also CLASSIFICATION (in biology).

The term has been extended to apply to various groupings analogous to biological species, and has been used in sociology in the phrase CONSCIOUSNESS OF KIND (q.v.). (J.M.B.)

Kind and Degree: for the foreign equivalents see the separate topics. A distinction applied to differences or transformations according as they are (degree) or are not (kind) stated entirely in terms of QUANTITY (q.v.).

The distinction, as popularly used, covers many ambiguities and confusions. (J.M.B.)

Kindergarten [Ger. *Kinder*, children, + *Garten*, garden]: Fr. *jardin de petits enfants*; Ital. *giardino d'infanzia*. A school for very young children, in which play is utilized as an instrument of instruction in the facts of nature and the customs and ideals of society.

According to Froebel, its founder, the object is as follows:—'It shall receive children before the school age, give them employment suited to their nature, strengthen their bodies, exercise their senses, employ the waking mind, make them acquainted judiciously with nature and society, cultivate especially the heart and temper, and lead them to the foundation of all living—to unity with themselves.'

Literature: FROEBEL, *Educ. of Man*; BOWEN, *Froebel and Educ. by Self-activity*. (C.D.G.)

Kinesis (1) and (2) **Metakinesis** [Gr. *κινῆσις*, to move, *μετά*, beyond]: not in use in Fr. and Ger.; Ital. *cinesi* and *metacinesi* (suggested—E.M.). (1) Physical movement as characterizing the material world; and (2) its supposed correlative or accompanying aspect which is psychical or quasi-psychical. Cf. MIND DUST THEORY.

Terms of the DOUBLE ASPECT THEORY (q.v.), introduced by Lloyd Morgan, for the two aspects in the case of physical changes in

which the psychic aspect is not apparent. A metakinesis is assumed, according to the requirements of the theory, to accompany the kinesis. See Lloyd Morgan, *Animal Life and Intelligence* (1891), and cf. K. Pearson, *Grammar of Science* (2nd ed., 1900), 339 ff. (J.M.B., C.L.L.M.)

Kinesodic [Gr. *κίνησις*, movement, + *ὁδός*, road]: Ger. *impulsleitend*, *kinesodisch* (see note on Ger. equiv. for AESTHESODIC); Fr. *kinésodique*; Ital. *cinesiodico*. Originative rather than receptive; said of tracts and centres which convey or give origin to centrifugal impulses. Cf. AESTHESODIC. More inclusive than 'motor' in the same connections, and not implying that the impulse necessarily issues in muscular contraction. Stimuli which produce or regulate secretion, digestion, and the like, or even inhibitory impulses, may be kinesodic. (H.H.)

Kinetic [Gr. *κινῆσις*, to move]: Ger. *kinetisch*; Fr. *cinétique*; Ital. *cinetico*. Relating to or growing out of motion, especially motion as an element of energy.

Kinetic theory of gases: the theory that air and other gases are formed of disconnected molecules in rapid motion and constantly colliding; that their heat is only the energy of these molecules due to their motion, and that their elasticity is only apparent, and is really due to the collisions of the molecules against the sides of the containing vessel.

Kinetic energy: see ENERGY. (S.N.)

Kinetics: Ger. *Kinetik*; Fr. *cinématique*; Ital. (*teoria*) *cinetica*, *cinematica*. The science of the motion of bodies as produced by the forces acting upon them, especially the particular forms which this science assumes when based upon the relations of kinetic energy to energy of position.

Introduced by Maxwell as a substitute for the term dynamics in the former limited sense of that word, the actual sense being now extended so as to include the general laws of force action. (S.N.)

Kingdom and Sub-kingdom (in biology): see CLASSIFICATION (in biology).

Kinship [AS. *cýn*, kin]: Ger. *Verwandschaft*; Fr. *parenté*, *consanguinité*; Ital. *consanguineità*. Blood-relationship.

The word kin belongs to a group of derivatives from roots that originally meant womb. In a series of essays collected in *The Chances of Death and other Studies in Evolution*, Karl Pearson has traced the history of these words in detail. The weight of evidence from all sources now shows that