

SECT. XLIII. संनिकर्षः.

The contact of organ and object, which is the cause of Perception, is of six kinds:-1 Conjunction, 2 Intimate union with the conjoint, 3 Intimate union with the intimately united with the conjoint, 4 Intimate union, 5 Intimate union with the intimately united, and 6 Connection of the attribute with the subject. Conjunction is the contact producing perception of the jar by the eye. Intimate union with the conjoint is the contact producing the perception of the colour of a jar, as the colour is intimately united with the jar which is conjoint with the eye. Intimate union with the intimately united is the contact in perceiving the genus of colour, as colour is intimately united with the jar conjoint with eye, and the genus of colour is intimately united therewith. Intimate union is the contact in the perception of word by the organ of hearing, as the organ of hearing is the ether in the cavity of the ear, (since) word is the quality of ether and the quality and the qualified are intimately united. Intimate union with the intimately united is the contact in cognizing the genus word, as the genus is intimately united with word which is intimately united with (organ of) hearing. The connection of the attribute and subject is the contact in the perception of negation, as the negation of a jar is an attribute of a place in contact with the eye wherever a place is devoid of a jar. The knowledge thus produced from the sixfold contact is Percept. Its peculiar cause is the organ. Hence organ is perception.

1. Having defined प्रत्यक्ष as the product of the contact of the organs of sense with their appropriate objects, the author now enumerates and illustrates the six varieties of this contact that is, six ways in which the different organs may come in contact with their objects. Three of these contacts are primary, viz. संयोग, समवाय and विशेषणविशेष्यता, and the other three are combinations of the two former, viz. संयुक्तसमवाय, संयुक्तसमवेतसमवाय, and समवेतसमवाय. The organ of sight being a द्रव्य comes in actual contact with a substance like a jar when it sees it; and so the संनिकर्ष is संयोग, the ordinary conjunction. The eye perceives also the colour of घट, as

colour is the special quality of light of which the eye is formed, but the organ, being a द्रव्य, cannot have direct conjunction with the quality of another substance; and hence the contact of the eye with घटरूप is संयुक्तसमवाय, *intimate union with the conjoined*, the रूप being intimately united with the घट which is conjoined with the organ. The जाति on घटरूप is also perceived by the organ of sight, because the *Naiyāyikas* have laid down a maxim, येनेन्द्रियेण यद्गृह्यते तेनेन्द्रियेण तद्वत् सामान्यं तत्समवायस्तदभावश्च गृह्यते,¹ 'the organ which apprehends a thing also apprehends the जाति and समवाय on that thing as well as its negation.' घटरूपत्व is therefore perceived by the eye by means of the contact संयुक्तसमवेतसमवाय, intimate union with a thing (घटरूप) which is intimately united with a substance (घट) that is in conjunction with the organ. The fourth contact is simple intimate union, as that of श्रोत्र, organ of hearing, which, being आकाशस्वरूप, is intimately united with its product the sound. The difference between श्रोत्र and other organs is that, while the latter are products (विकार) of their corresponding elements, such as the eye of light, the nose of earth and the taste of water, the श्रोत्र is the all-pervading ether itself in its elemental form, defined and conditioned by the cavity of the ear. Sound therefore as a product of the ether has direct intimate union with श्रोत्र, while other qualities are not so directly brought into contact with their corresponding organs. शब्द being apprehended by समवाय, its जाति शब्दत्व is obviously apprehended by समवेतसमवाय, intimate union with a thing (शब्द) intimately united with the organ.) The last संनिकर्ष will be noticed further on.

In the case of other organs also the same contacts will be found efficient. The only organ besides the eye which, according to some, apprehends substances and therefore has conjunction with them is the organ of touch. The three external organs, घ्राण, रसन and श्रोत्र, apprehend qualities only; and the kind of contact operating in the case of each object apprehended by these senses can be easily determined.

2. The subject is involved in some intricacy owing to the difference that exists in the perceptive capacity of the various organs. Some organs are said to perceive substances and qualities, while others perceive qualities only. Hence we must distinguish between the perception of substances and the perception of qualities, actions and generalities. गुण, कर्म and सामान्य, are, according to all, perceived by their respective organs and by means of appropriate contacts. Perception of these therefore is divided into six kinds according to the six organs of sense namely द्रव्यज्ञ, रासन, चाक्षुष, स्पर्शन, श्रोत्रिय, and मानस, while the things perceived are respectively the qualities, odour, savour, colour, touch, sound, pleasure, and pain, as well as their generalities and negations.¹ Substances, however, are held to be perceivable by two senses only, the sight and the touch, the remaining four organs being capable of perceiving qualities only. As to the perception of substances by sight there is not and cannot be any doubt, but there is a difference of opinion as to whether the organ of touch is capable of perceiving a substance. The ancient *Naiyāyikas*' answer is in the negative, asserting that उद्भूतरूप is a necessary condition for every external perception of a substance, while the moderns answer in the affirmative saying that उद्भूतस्पर्श can be also efficient for external perception. The controversy has been already explained in a previous Note.²

Perception by touch.

3. *Viśvanātha* lays down a rule which is as it were a compromise between the two views :—

उद्भूतस्पर्शवद्द्रव्यं गोचरः सोऽपि च त्वचः ।
रूपान्यच्चक्षुषो योग्यं रूपमत्रापि कारणम् ॥³

“ A substance having a manifested touch is apprehended by the organ of touch, and also touch. Everything except colour that is perceived by the eye is perceived by the organ of touch also ; but (manifested) colour is necessary even in

1 B. P. 51.

2 See Note p. 117. *Supra*.

3 B. P. 25.

these cases." त्वक् is thus declared to be capable of perceiving, but only when the thing is also visible to the eye; and the same will probably be the case with the other organs. Thus neither touch nor savour nor odour can be perceived in atoms which have no manifested colour. This compromise however is not tenable, for, if strictly taken, the touch in air and the sound in ether should always be imperceptible as the two substances have no manifested colour; but this cannot be accepted, and so the necessity of उद्भूतरूप for all perceptions must be confined to substances only. This is the ancient view and also that of *Annambhaṭṭa*. He has declared air to be imperceptible and inferrible from the existence of touch, while touch itself is defined as a quality perceived by the aerial cuticle (त्वग्ग्राह्यो गुणः). It is clear therefore that he accepts the capacity of त्वक् to perceive qualities, but not substances unless the latter possess उद्भूतरूप. Similarly the श्रोत्र can perceive sound but not ether, both because it has not उद्भूतरूप and also because it is not distinct from the organ. As regards मानसप्रत्यक्ष it is to be noted that while pleasure, pain etc. are perceived by the mind, the human soul is perceptible according to the *Naiyāyikas*, but not according to the *Vaiśeṣikas*.¹ *Annambhaṭṭa* holds the *Vaiśeṣika* view. By thus distinguishing the perception of substances from that of qualities we can, it seems, remove the apparent discrepancy between several passages of T. S. and T. D., in some of which the author appears to limit the term प्रत्यक्ष to चाक्षुषप्रत्यक्ष only, while in others as in the present, he talks of the perception by other organs such as श्रोत्र and त्वक्. In the case of substances there is चाक्षुषप्रत्यक्ष only and perhaps त्वाच also; while in the case of qualities there are six kinds which, though nowhere expressly mentioned by the author, can be inferred from his mentioning श्रोत्र in the present passage. In conclusion he declares the organ itself to be the प्रत्यक्षप्रमाण, that is the करण of प्रत्यक्ष, thereby removing any doubt as to whether he takes इन्द्रिय or इन्द्रिय-संनिकर्ष to be the करण.²

4. The five contacts account for the perception of the first four categories. विशेष, being a परमाणुधर्म, is unpercepti-

1 B. P. 49; see Note 6 under Sec. 17, p. 144, *Supra*.

2 See on this Note p. 191, *Supra*.

ble. The cases of समवाय and अभाव are specially provided for by the sixth संनिकर्ष called विशेषणविशेष्यभाव. This last is of a peculiar kind, and is assumed to account for the perception of negation and intimate union according to those in

The sixth contact.

whose opinion both are perceptible, and of negation only according to those who deny the perceptibility of समवाय. *Viśvanātha* says :—अभावप्रत्यक्षे समवायप्रत्यक्षे चेन्द्रियसंबद्धविशेषणता हेतुः। वैशेषिकमते तु न समवायः प्रत्यक्षः.¹ The *Naiyāyikas* hold समवाय to be perceptible by विशेषणविशेष्यभाव, while the *Vaiśeṣikas* regard it as अतीन्द्रिय and inferrible only. *Annam-bhaṭṭa* as usual holds the *Vaiśeṣika* view, as may be easily guessed from his proving समवाय by inference in T. D. on Sect. 79. The विशेषणविशेष्यभाव is therefore confined, according to our author, to the perception of negation, which requires a special contact because neither संयोग nor समवाय is possible in the case of अभाव. Negation, not being a substance, cannot exist by itself; nor can it reside in any other substance by समवाय, as it is neither quality, nor action, nor जाति. How does it then exist in the world, and how is it apprehended? It is conceived, replies the *Naiyāyika*, as a *property* (धर्म) of its अधिकरण, that is of the thing on which it exists. Thus in a cognition घटाभाववद्भूतलम् the घटाभाव is spoken of as the विशेषण of the भूतल which is the विशेष्य, their relation विशेषणविशेष्यभाव being expressed by the termination वत्. Now let us see how this cognition takes place. We observe the spot of ground and see no jar on it. The spot of ground, being a substance, is perceived by the contact संयोग, that is, it is physically connected with the कृष्णताराग्रवर्ति चक्षुः; but the घटाभाव on भूतल can come into contact with the eye through भूतल only. The संनिकर्ष therefore by which the घटाभाव on भूतल is perceived is the contact between the चक्षुस् and भूतल, *i. e.* संयोग plus that between भूतल and घटाभाव, *i. e.* विशेषणविशेष्यभाव, the combined contact being named संयुक्तविशेषणविशेष्यभाव, or rather इन्द्रियसंबद्धविशेषणविशेष्यभाव. Now the relation विशेषणविशेष्यभाव existing between भूतल and घटाभाव, though spoken of as one, may be split up into two; that is, the relation of घटाभाव with भूतल may be called विशेषणता, and that of भूतल with घटाभाव

विशेष्यता. Hence विशेषणविशेष्यभाव is often spoken of as two contacts, विशेषणतासंनिकर्ष and विशेष्यतासंनिकर्ष, or taking them in their enlarged form, इन्द्रियसंबन्धविशेषणता and इन्द्रियसंबन्धविशेष्यता. Thus the perception of घटाभाव on भूतल is effected by means of two contacts, not of course jointly but alternately ; that is, either of the two contacts serves the purpose. But why should two contacts operate in the perception of घटाभाव, when one only suffices for the perception of घट ? The reason is that the existence of घटाभाव on भूतल may be expressed in two ways, घटाभाववद्भूतलमस्ति or भूतले घटाभावोऽस्ति, both of which propositions, though conveying the same meaning, namely, the negation of घट on भूतल, are different in grammatical form and therefore produce different cognitions. In घटाभाववद्भूतलम्, भूतल is the विशेष्य and घटाभाव its विशेषण, while in भूतले घटाभावोऽस्ति, घटाभाव being in the nominative is the विशेष्य, and the locative भूतले is its विशेषण. The first cognition is principally that of भूतल as possessing घटाभाव (घटाभावविशिष्ट), the second cognition is that of घटाभाव as residing in भूतल (भूतलनिष्ठ) ; or to use technical expressions already explained, the first cognition has भूतल for its विशेष्य and घटाभावविशिष्टत्व for its प्रकार, while the second has घटाभाव for its विशेष्य and भूतलनिष्ठत्व for its प्रकार (property). Thus the two cognitions being different in form and having a different प्रकार respectively, the contacts operating to produce them are also different. In the first घटाभाववद्भूतलम्, the eye is संयुक्त with भूतल of which घटाभाव is विशेषण, and therefore the संनिकर्ष is संयुक्तविशेषणता ; in the second भूतले घटाभावः, the eye is संयुक्त with भूतल of which घटाभाव is विशेष्य, and therefore the संनिकर्ष is संयुक्तविशेष्यता. As these two cognitions, though differing in form, are identical in meaning, they are conjointly and briefly expressed in the text as being produced by the compound contact विशेषणविशेष्यभाव..

5. One might ask here, why should there not be two cognitions in the perception of घट similar to those in the perception of घटाभाव ? We can say घटवद्भूतलम् as well as भूतले घटोऽस्ति, so that in one case घट is the विशेषण of भूतल, and in the other भूतल is the विशेषण of घट ; and therefore there ought to be two contacts corresponding to these two cognitions in the perception of घट also. But this is not so, for we never

perceive घटाभाव by itself but only as a property of भूतल, and so the double relation subsisting between भूतल and घट is required to be taken into account ; while we perceive घट by itself, and there is no necessity of bringing in भूतल. In the case of घटाभाव, the eye is directly connected with भूतल, and through it with the अभाव; while in the case of घट it is directly connected with घट itself, and therefore there is only one संनिकर्ष, namely संयोग.

6. V. V. reads simply विशेषणता instead of विशेषणविशेष्यभाव: in the text, and mentions as a reason for
A reading discuss- his preference that the T. S. gives an
ed. example of विशेषणता only, and so may have intended to limit the संनिकर्ष to that alone. But it will be clear from the above explanation that V. V. 's reading as well as the reason for preferring it are both wrong. Although T. S. gives an instance of विशेषणता only, T. D. supplies the desideratum which V. V. seems not to have noticed.

7. As the negation of घट on भूतल is perceived by संयुक्तविशेषणतासंनिकर्ष, so the negation of घटरूप on घटसंख्या or *vice versa* is perceived by संयुक्तसमवेतविशेषणता, the eye being संयुक्त with घट which is समवेत with संख्या of which रूपाभाव is a विशेषण. Similarly the negation of घटरूप on घटसंख्यात्व is perceived by संयुक्त- (घट)समवेत- (संख्या)समवेत- (संख्यात्व)विशेषणता; and so on with other organs and the negations of their corresponding objects. शब्दाभाव however is perceived by simple विशेषणता, not इन्द्रिय-संयुक्तविशेषणता, for शब्दाभाव is the विशेषण of श्रोत्र itself as the organ is identical with आकाश which is the real अधिकरण of शब्दाभाव. शब्दत्वाभाव (e. g. the अभाव of कत्व on स्वत्व) is apprehended by इन्द्रियसमवेतविशेषणता.¹ Both विशेषणता and विशेष्यता are therefore of two kinds, इन्द्रियविशेषणता-शेष्यता simply, and इन्द्रियसंबद्धविशेषणता-शेष्यता; the first two in the perception by श्रोत्र and correspond to समवाय and समवेतसमवाय contacts, the latter two in the case of other organs and correspond to the other three contacts. विशेषणविशेष्यभाव mentioned by *Annam-bhaṭṭa* is therefore not a simple contact but has five varieties, corresponding to the first five contacts, although all of them.

are comprised under one name as they all have a common element, विशेषणता or विशेष्यता.

8. T. D. here introduces a discussion as to why a fifth proof called अनुपलब्धि which is accepted by *Mīmāṃsakas* and *Vedāntins* is not recognized by the *Naiyāyikas*. The former hold that

'Anupalabdhi' proof.

अभाव is not perceptible because there can be no manner of contact between a substantial organ and a pure negation, and have therefore to account for the apprehension of negation by a fifth proof called अनुपलब्धि (non-perception); while the *Naiyāyikas* hold that अभाव is perceptible by the same organ which perceives its प्रतियोगी, but by means of a peculiar संनिकर्ष called विशेषणविशेष्यभाव. So that one party assumes a separate proof to account for अभावज्ञान, and the other assumes a separate संनिकर्ष. The arguments on both sides are equally specious and interminable, and the controversy is at last reduced to a determination of the comparative simplicity (लाघव) of the two rival assumptions. The *Naiyāyikas* however cannot wholly dispense with अनुपलब्धि. अभाव is not a thing that is independently known. The cognition of अभाव necessarily depends on the previous knowledge of its counter-entity (घट) and its support (भूतल). Now the fact that we never perceive घटाभाव wherever there is घट shows that there is a relation of contrariety between the two, and that the absence of the one must be ascertained before the other can be apprehended. This ascertainment of the absence of घट, or अनुपलब्धि, is therefore deemed to be a necessary condition for the perception of घटाभाव; that is, अनुपलब्धि is a सहकारी (accessory) of the चक्षुरिन्द्रिय which perceives घटाभाव on भूतल. Now what is this अनुपलब्धि? It is not simply the not-perceiving or not-finding; for though we do not perceive घट in darkness, we do not also perceive घटाभाव there. The अनुपलब्धि (non-perception) must be तार्किकप्रतियोगिसत्त्वाविरोधि, that is, must be 'inconsistent with the hypothetical assumption of the existence of its प्रतियोगी घट.' It is not sufficient that we do not perceive घट; we must not perceive it in a place, where, from all surrounding circumstances, we would naturally expect to find it, but do not owing to its actual absence. The अनुपलब्धि must therefore be preceded by an ascertainment that no unfavourable circum-

stances such as darkness exist which would prevent even a present घट from being perceived. T. D.'s expression तर्कित-प्रतियोगिसत्त्वविरोधदुपलब्धि has been dissolved and interpreted by *Nilakantha* in two ways both of which really convey the same meaning. The simpler method is तर्कितमारोपितं यत्प्रतियोगिसत्त्वं तद्विरोधिनी यादुपलब्धिः 'that non-perception which is inconsistent with the assumed existence of प्रतियोगी.' तर्क is an assumption or hypothesis (a *reductio ad absurdum* as it is sometimes called) which is for a moment taken for granted for the purpose of proving the contrary. So here we first assume the प्रतियोगिसत्त्वं, i. e. the existence of घट, in the place, and then reject it as false because that प्रतियोगिसत्त्वं is not perceived although all the conditions are favourable. Our reasoning is यद्यत्र घटोऽभविष्यत्तर्हि भूतलमिवाद्राक्ष्यत 'if there had been घट here, we should have necessarily perceived it just as we perceive 'भूतल,' the perception of भूतल showing that the usual conditions for चाक्षुषप्रत्यक्ष are existing. By this तर्क we assume the existence of घट in the place. But this assumption is inconsistent with the actual fact that we do not perceive the घट, and must be therefore rejected. In this way our non-perception of घट which was doubtful at first is made certain by the intermediate assumption and its rejection. It is this fully ascertained non-perception that assists the eye in apprehending घटाभाव. The compound may also be dissolved as तर्किता आपादिता प्रतियोगिनो घटादेः सत्त्वस्य सत्त्वप्रसक्तेः विरोधिनी या उपलब्धिः तत्प्रतियोगिकोऽभावोऽनुपलब्धिः 'that non-perception which is opposed not to the real existence of घट but to its assumed existence.' Either way the result is the same, that the non-perception must be first ascertained by a proper enquiry that the घट does not really exist. But even this periphrasis is not enough to guard the definition from a fault. Merit (धर्म) and demerit (अधर्म) being qualities of the soul are imperceptible; if therefore one after looking for them in vain concludes that they do not exist at all, one will be quite wrong, for the imperceptibility of merit and

demerit is inherent and not due to their non-existence. अनुपलब्धि is therefore qualified with योग्य, so that the ascertained non-perception must be of a thing capable of being perceived. In the *Naiyāyika* view therefore अभाव is perceived by the विशेषणविशेष्यभाव-संनिकर्ष (i. e. as a property of its support भूतल) with the accessory aid of a योग्यानुपलब्धि, that is, an ascertained non-perceptible object. The *Naiyāyikas* have thus to make two assumptions, one of a new संनिकर्ष and another of its accessory अनुपलब्धि; while the *Mīmāṃsakas* are satisfied with one assumption only, namely that of a new प्रमाण or प्रमाकरण. T. D. thinks that the first two being only subordinate, there is greater लाघव in assuming those two than in assuming the last one; because it is simpler to assume two operations (व्यापार) than to recognize a separate instrument (करण). Besides the relation विशेषणविशेष्यभाव is not really a new thing; but it is identical with the अधिकरण भूतल itself, for when we say that there is घटाभाव on भूतल we really mean nothing more than that there is भूतल and nothing else. Hence *Nilakaṇṭha* defines विशेषण-विशेष्यभाव as स्वरूपसंबन्धावाच्छिन्नाधाराधेयभावः. The only new assumption is that of अनुपलब्धि which is also common to the *Mīmāṃsakas*. The difference between the two schools is simply that the one calls it accessory, the other principal.

9. It may not be out of place here to notice a distinction between a cognition and its appropriate proof. Cognition resulting from प्रत्यक्षप्रमाण perception is a *percept*; but the contrary is not true; a *percept* does not necessarily arise from perception alone. It may arise from another kind of proof, such as शब्द or अनुपलब्धि. Both *Nyāya* and *Mīmāṃsā* agree in holding that अभाव is an object of perception. But the प्रत्यक्षत्व of a thing according to *Mīmāṃsā* does not depend upon its resulting from प्रत्यक्षप्रमाण. A *Vedāntic* writer remarks on this point, न हि फलीभूतज्ञानस्य प्रत्यक्षत्वे तत्करणस्य प्रत्यक्षप्रमाणतानियमत्वमस्ति । दशमस्त्वमसीत्यादि-वाक्यजन्यज्ञानस्य प्रत्यक्षत्वेऽपि तत्करणस्य वाक्यस्य प्रत्यक्षप्रमाणभित्तप्रमाण-

स्वाभ्युपगमः । Perceptive knowledge is not necessarily caused by perception ; it may be caused by अनुपलब्धिप्रमाण or by शब्दप्रमाण, just as in the sentence, "Thou art the tenth," the cognition of being the tenth, though a percept, is not caused by perception, but by word.

10. The remark of the *Vedānta-Paribhāṣā* quoted at the

end of the last preceding Note is important as showing that the *Nyāya* ideas of perception and percept materially differ from those of other schools, and that *Annam-*

The Nyāya view of Perception as distinguished from that of others.

bhaṭṭa's definitions of them will not at all be accepted as correct by *Vedāntic* writers. The *Naiyāyika* theory of perception and in fact of all knowledge is essentially physical. All cognitions (बुद्धयः) are conceived to be merely qualities residing in the soul which is a substance, and exactly in the same way as the quality of blueness or whiteness resides in the jar. These cognitions again are all primarily derived from perceptive experience which is again founded on the physical contact of senses with external objects. There is nothing idealistic or supersensuous in this matter-of-fact and almost mechanical theory of the origin of our ideas. This is the reason why the *Nyāya-Vaiśeṣika* system has become so thoroughly realistic, and why it is strenuously opposed by the ideal and pantheistic philosophers of the *Sāṃkhya* and *Vedāntic* schools. The *Nyāya* theory of perception has a very close resemblance to Locke's doctrine of sensationalism and may be described almost in his own words. Locke considers that all our knowledge is derived from *experience* which is two-fold, "observation employed either about external sensible objects or about the internal operations of our minds, perceived and reflected upon by ourselves." These two sources of our ideas are thus described:—

"First. Our senses conversant about particular sensible objects, do convey into the mind several distinct perceptions of things, according to those various ways wherein those objects do affect them; and thus we come by those ideas we have of yellow white, heat, cold, soft, hard, bitter, sweet, and all those which we call sensible qualities; which when I say that the senses convey into the mind, I mean, they from external objects convey into the mind what produces there those perceptions. This great source of most of the ideas we have, depending wholly upon our senses, and derived by them to the understanding, I call, sensation.

"Secondly. The other fountain from which experience furnisheth the understanding with ideas, is the perception of the operations of our own minds within us as it is employed about the ideas it has got; which operations when the soul comes to reflect on and consider, do furnish the understanding with another set of ideas which could not be had from things without; and such are perception, thinking, doubting, believing, reasoning, knowing, willing, and all the different actings of our own minds; which we being conscious of and observing in ourselves, do from these receive into our understanding as distinct ideas, as we do from bodies affecting our senses." * * *

"The understanding seems to me not to have the least glimmering of any ideas which it doth not receive from one of these two. External objects furnish the mind with the ideas of sensible qualities, which are all those different perceptions they produce in us; and the mind furnishes the understanding with ideas of its own operations."¹

This may almost be mistaken for a translation of a passage in some *Nyāya* work. Locke's theory of senses has now been partially abandoned chiefly owing to the powerful criticism of Kant, but its enormous influence on subsequent philosophical thought cannot be doubted. Similarly the *Naiyāyikas'* doctrine of संनिकर्ष was afterwards considerably modified by *Vedāntins* and others, but not before it had given a decided turn to philosophical speculations in India.

¹ Locke: *Essay on Human Understanding*, Bk. II ch. 1, Sec. 3, 4.

SECT. XLIV. अनुमानम्.

Inference is the peculiar cause of a judgment ; judgment is the knowledge that springs from परामर्श or consideration : consideration is the knowledge of reason as distinguished by invariable concomitance, as for instance, the knowledge that this mountain has smoke which is invariably accompanied by fire is Consideration, while the knowledge born of it that the mountain is fiery is Judgment. Invariable concomitance is the certainty of association that wherever there is smoke, there is fire. The existence of an invariably concomitant thing on objects like mountain makes it the characteristic of a पक्ष or Receptacle.

1. The chapters on Inference contain the science of Indian logic as developed and skilfully dovetailed into the general system of metaphysics evolved by the *Vaiśeṣikas*.

Judgment and Inference. अनुमान or inference is the instrument, अनुमिति the resulting judgment, and परामर्श the intermediate operation. अनुमिति is thus said to depend upon परामर्श. This परामर्श occupies a very important place in *Nyāya* logic ; because when once a valid परामर्श is obtained a sound conclusion or अनुमिति necessarily and immediately follows, just as cloth is produced as an invariable consequence of the motion of the loom. Hence *Nyāya* writers mainly devote themselves to a discussion of this परामर्श and its two constituent parts व्याप्ति and लिङ्ग. लिङ्ग or हेतु is the thing from which the existence of another thing invariably concomitant with it is inferred ; व्याप्ति is this invariable concomitance existing between the लिङ्ग and the other thing inferred from it, namely साध्य.

2. It will be clear from the above that an inference when simplified always consists of three terms denoting respectively हेतु, साध्य and their mutual relation of invariable concomitance, any two of which when given necessarily lead to a knowledge of the third. Of these the साध्य is of course the thing which is always to be proved ; and consequently the other two terms, हेतु and the हेतुसाध्यसंबंध or व्याप्ति as it is called, must be known before any inference is possible. In

the Aristotelian syllogism they correspond to the first two premises which, being connected together by a common middle term, lead to the conclusion; but the Aristotelian syllogism is defective in so far as it merely implies this connection between the two premises, and has no separate premise to express it. The *Nyāya* syllogism on the other hand actually expresses this connection by joining the two premises, or rather the two terms denoting हेतु and व्याप्ति into one; that is, it does not merely state the two terms or premises separately, and then at once jump to the conclusion, but after stating them fully gives a third premise which combines the previous two terms, and thus gives a unity as it were to the two separate cognitions of हेतु and व्याप्ति. This combined premise is called the परामर्श, which immediately gives rise to the conclusion and is therefore said to be its करण.

3. परामर्श has been said to be a combination of two distinct notions, those of हेतु and व्याप्ति. But how is this combination effected? Not simply by placing them side by side, nor

by putting them in a sentence as subject and predicate: but by joining them inseparably as विशेष्य and विशेषण or subject and attribute. The विशेषणतासंबन्ध being indissoluble is the closest union between two things, and consequently the perfect unity of परामर्श is attained by making व्याप्ति the विशेषण of हेतु, that is by making the हेतु व्याप्तिविशिष्ट. A परामर्श may therefore be defined as the knowledge not merely of व्याप्ति and हेतु but of व्याप्तिविशिष्टहेतु.

4. The author however defines परामर्श as the knowledge of व्याप्तिविशिष्टपक्षधर्मता. Does this latter definition differ from that noted above?

In other words, does पक्षधर्म differ from what we have called the हेतु? Really not, for पक्षधर्मता is nothing more than a particular kind of हेतुता; or rather it is हेतुता under particular circumstances. It is not any हेतु that will give rise to परामर्श, but only such a one as besides being व्याप्तिविशिष्ट is also पक्षधर्मताविशिष्ट. As a matter of fact a हेतु is always व्याप्तिविशिष्ट and is already stated to be so in the व्याप्तिवाक्य, just as in the major premise of the Aristotelian syllogism. When for instance

we say यत्र यत्र धूमस्तत्र तत्र वह्निः or "all men are mortal," we always lay down the invariable concomitance of धूम and वह्नि or humanity and mortality ; that is, we state धूम to be वह्निव्याप्यता-(व्याप्ति)विशिष्ट, and मनुष्यत्व to be मर्त्यत्व-व्याप्तिविशिष्ट. But this alone is not sufficient to produce a new conclusion, for besides the major we also require a minor premise in which the range of हेतु is restricted, that is, we speak of it not generally as in the major premise, but in connection with a particular place or a particular occasion only. Hence in addition to being व्याप्तिविशिष्ट, the हेतु must also be qualified by another limitation, namely पक्षधर्मता (the fact of its being a property of पक्ष or place). For a proper conclusion therefore the हेतु must be व्याप्तिविशिष्ट, and must also be known as a धर्म residing in पक्ष ; in other words it must be known to be invariably associated with the साध्य and must also be cognized as being in a particular place (पक्ष). So that we have two separate cognitions respectively expressed by Aristotle's major and minor premises, namely, that the हेतु is invariably concomitant with साध्य and that it exists in a particular place. These separate cognitions combined together produce the joint cognition that that हेतु which is known to be invariably concomitant with साध्य exists in the particular place ; or to take a concrete example, that the smoke which is known to be वह्निव्याप्य exists on the mountain. This joint cognition वह्निव्याप्यधूमवान् पर्यंतः which is formed by the combination of the two independent cognitions of हेतु as पक्षधर्म and as व्याप्तिविशिष्ट is called परामर्श. Annambhatta's definition of परामर्श however requires some further elucidation before it can be fully understood.

5. The preceding remarks are equally applicable to both the Aristotelian and the *Naiyāyika* syllogistic systems ; and they are intended to show that both systems, though widely differing in their ultimate forms, are really founded on identical analysis of our thinking process. The two systems materially agree with each other until we arrive at the two cognitions expressed by Aristotle in the form of major and minor premises, and by the *Naiyāyikas* as व्याप्ति and पक्षधर्मता respectively. But from this point they

*Comparison of the
Aristotelian with
the Naiyāyika syl-
logism.*

diverge, chiefly on account of their different ways of combining these two cognitions ; and the divergence, though slight at first, ultimately leads to the different forms of syllogism in the two systems. Aristotle first cognises हेतु as invariably concomitant with साध्य (in the major premise), and then finds this invariably concomitant हेतु in a particular place in the minor ; that is, he first makes sure of व्याप्ति as a general truth, and then determines the existence of this साध्यव्याप्यहेतु on the पक्ष. The *Naiyāyika* reverses the order, by first determining the हेतु on पक्ष, and then joining to it the notion of invariable concomitance, which, being derived from past experience, is remembered as soon as the हेतु is perceived on the पक्ष. In Aristotle's system, व्याप्ति is determined first and then पक्षधर्मता; in *Nyāya* first पक्षधर्मता of the हेतु is known and then the recollected notion of व्याप्ति is added to it. To adopt Sanskrit terminology, the combination of the two notions, *i. e.* the परामर्श, is expressed in *Nyāya* as व्याप्तिविशिष्टपक्षधर्मता; while Aristotle would probably have described it as पक्षधर्मताविशिष्टव्याप्ति, if of course he had laid down any third premise corresponding to परामर्शवाक्य. As a matter of fact we do not find this last form in Aristotle's syllogism, because the mixture of the two notions of व्याप्ति and पक्षधर्मता designated परामर्श is only implied and not expressed in the Aristotelian inference. If however we introduce a premise into the latter syllogism corresponding to परामर्श, we shall find that it assumes exactly the form indicated above, *viz.* पक्षधर्मताविशिष्टव्याप्ति. Take for example :—

All men are mortal ;
Socrates is a man ;
Socrates is mortal.

A *Naiyāyika* will put this as :—

Humanity (मनुष्यत्वं) is invariably concomitant with
mortality (मर्त्यत्वव्याप्यं) ;

There is humanity in Socrates ;
∴ There is mortality in Socrates.

This syllogism is defective according to *Nyāya*, because just before the conclusion there is wanting a step combining

the two premises into one proposition. This परामर्श would be "the humanity in Socrates is invariably concomitant with mortality;" that is, we cognize मनुष्यत्व not as मर्त्यत्वव्याप्य generally, but as मर्त्यत्वव्याप्य in a particular individual Socrates. In other words, the व्याप्ति which was first universal is here limited by पक्षधर्मता, i. e. पक्षधर्मताविशिष्टव्याप्ति. On the other hand, the same argument put in the *Nyāya* syllogism would be:—

देवदत्तो मर्त्यः (मर्त्यत्वविशिष्टः) ।

मनुष्यत्वात् ।

यो यो मनुष्यः स मर्त्यत्वविशिष्टः । यथा यज्ञदत्तः ।

तथा चायं देवदत्तः (मर्त्यत्वव्याप्यमनुष्यत्वविशिष्टः) ।

तस्मात्तथा (देवदत्तो मर्त्यः) ।

The only difference between this and the former syllogism is that here in the fourth step i. e. परामर्श we predicate मर्त्यत्वव्याप्यमनुष्यत्वविशिष्टत्व of देवदत्त, while in the former we predicated मर्त्यत्वव्याप्यत्व of देवदत्तनिष्ठमनुष्यत्व. The result of course is the same, and the conclusion is as valid in the one as in the other syllogism.

6. The above distinction between the forms of the Aristotelian syllogism and Sanskrit *Nyāya* is no doubt rather subtle, and cannot be fully grasped by a student in a preliminary stage; but it is very important as it explains the peculiar form assumed by the syllogism of the *Naiyāyikas*. It is referred to here in order to show the exact significance of *Annambhaṭṭa*'s definition of परामर्श. The *Naiyāyika* अनुमिति is essentially based on परामर्श, and the form of परामर्श is largely due to the peculiar structure of the *Nyāya* syllogism. The necessity and the form of the परामर्श have been much criticized by writers imperfectly acquainted with the *Nyāya* system; but the above analysis will show that परामर्श is not only natural, but absolutely essential in every process of inference. Only it must be looked at from its proper standpoint. Persons accustomed to Aristotle's syllogism find it difficult at first to comprehend the *Nyāya* theory of inference, involved as it is in endless technicalities and intricacies extremely puzzling to beginners. These technicalities however are not meaningless; on the contrary they will be found on a proper examination to be the result of a deep

and far-reaching analysis of our process of thinking. To understand the Indian logical method, it is quite necessary to view all its parts in their proper light. The above comparison of the Indian and Aristotelian syllogisms will therefore be useful as showing how both, though starting from the same common principles, differ in their outward form owing to a difference in the manner of applying those principles.

7. अनुमिति:—The gist of अनुमान has been succinctly put by *Keśava Mīśra* in the following statement, अनुमानस्य द्वे अङ्गे व्याप्तिः पक्षधर्मता चेति । तत्र व्याप्त्या साध्यसामान्यासिद्धिः । हेतोः पक्षधर्मताबलात् साध्यस्य पक्षधर्मत्वविशेषः सिध्यति ।¹ This means that of the two parts of an अनुमान, व्याप्ति and पक्षधर्मता, the first proves the invariable association of साध्य with हेतु in general, while the latter proves the same on पक्ष. The inference therefore consists in proving existence of साध्य on पक्ष from that of हेतु. *Vātsyāyana* explains the derivation of अनुमान as मितेन लिङ्गान्वयस्य पश्चान्मानम्, the 'subsequent ascertaining of a thing (साध्य) from a sign already known.'² The same scholiast defines अनुमान as लिङ्गलिङ्गिनोः संबन्धदर्शनम्³ or rather प्रत्यक्षेण अप्रत्यक्षस्य संबन्धस्य प्रतिपत्तिः. The last definition is certainly the simplest, though not very accurate. It describes अनुमान as the process by which from the *perceived* we get at the knowledge of an associated *unperceived*. It is free from some objections to which *Annambhaṭṭa*'s definition is liable. One such objection is noted and answered by T. D., namely, that the definition of अनुमिति (परामर्शजन्यज्ञानत्वं) would extend to संशयोत्तरप्रत्यक्ष, which too is produced by a kind of intermediate परामर्श. When one sees indistinctly some elongated substance standing at a distance, one first doubts whether it is a post or man. Then the observer examines it carefully, and on perceiving hands and feet to it he concludes that it is a man and not a post. This last conclusion ought to be an अनुमिति for it is derived from a हेतु, करादिमत्त्व. We reason पुरुषत्व-विशिष्टोऽयम् । करादिमत्त्वात् । यो यः करादिमान् स स पुरुषः । यथा देव-दत्तः । and so on. This would be an अनुमिति, although we

¹ T. B. Ben. ed. p. 41.

² *Vāt.* on G. S. I, 1, 3.

³ *Vāt.* on, G. S. I, 1, 5, *Ibid* II. 2, 2.

usually call it प्रत्यक्ष because we actually perceive the man after the intermediate reasoning. *Vātsyāyana's* definition would obviously exclude it, for here although we reason we do not infer an *unperceived* thing from the *perceived*, both पुरुष and करादि being actually perceived. The answer given by T. D. is somewhat different. Similarly there will also be अतिव्याप्ति on सविकल्पकज्ञान which is got after some sort of an unconscious process of reasoning. We first see a thing indistinctly and cognize its property कम्बुग्रीवादिसत्त्व separately; then we infer from the latter that the thing is a jar. Similarly cognitions derived from उपमान and शब्द also fall under अनुमान and are actually so included by the *Vaiśeṣikas* and *Bauddhas*. But we cannot include these cognitions under अनुमिति for they give rise to a different consciousness (अनुव्यवसाय) such as साक्षात्करोमि or उपमिनोमि while in an अनुमिति the consciousness is अनुमिनोमि. The definition of अनुमिति is therefore faulty, in as much as it applies to cognitions that are not अनुमिति. T. D. gives one answer to both this and the former objection, viz., that although there is परामर्श in संशयोत्तरप्रत्यक्ष, it is not accompanied by पक्षता which is a necessary condition of an inference. It is therefore necessary to understand what पक्षता really signifies.

8. पक्षता :--An inference has been already described as the application of a general truth to a particular instance. When we infer that

Pakṣatā.

Socrates is mortal, we simply realize in

Socrates that property of mortality which we already know generally as being invariably associated with humanity. This particular instance is called पक्ष and may be an individual, a substance, a place or any other thing, of which an inferrible property can be predicated. पक्षता is the characteristic which distinguishes the पक्ष for the time being from other things of the same or of different nature. Thus any mountain is not पक्ष, but it becomes one as soon as we observe smoke on it, and desire to infer fire therefrom. पक्ष is first defined as सिद्धचभाववान्, 'possessing the non-ascertainment of a thing', that is, having on it a thing (साध्य) which is unascertained but which is to be inferred. Why not then simply say साध्यवान् पक्षः, rather

than saying सिद्ध्यभाववान् पक्षः ? Because although the पक्ष, as a mountain for instance, may have fire on it, we do not know it at first. In the beginning we simply know that the fire is not ascertained, that is, we know of the non-ascertainment of the साध्य (सिद्ध्यभाव) ; but not of the साध्य itself. Where fire is actually perceived its existence is ascertained and there is no knowledge of non-ascertainment, and consequently no पक्षता. But suppose we desire to infer fire from smoke even though we know of its existence from another source. There is no सिद्ध्यभाव here, but the inference would be still valid. In a परार्थानुमान again the साध्य is already previously ascertained by the speaker ; and so if पक्षता were simply defined as सिद्ध्यभाव all such inferences would be excluded. The ascertainment (सिद्धि), therefore, the absence of which constitutes पक्षता, is qualified as being that which is accompanied by सिषाधयिषाविरह 'absence of any desire to infer.' The compound सिषाध-भावः, is to be dissolved as सिषाधयिषाविरहसहकृता या सिद्धिः तस्या अभावः, and not सहकृतो यः सिद्ध्यभावः ; that is, for पक्षता there is required not only an absence of सिद्धि, but also an absence of सिषाधयिषाविरह or rather the absence of a सिद्धि which is सिषाधयिषाविरहसहकृतः. In a परार्थानुमान or in the case above mentioned where fire though actually perceived is sought to be proved by inference, although there is the सिद्धि, it is not accompanied by सिषाधयिषाविरह ; and consequently there is still an अभाव of such a सिद्धि as is सिषाधयिषाविरहसहकृतः. This latter अभाव results from the non-existence of either of its constituents (viz. सिषाधयिषाविरह or सिद्धि), and exists both where there is no सिद्धि as in an ordinary अनुमान, and also where there is सिद्धि but there is no सिषाधयिषाविरह, i. e. where there is सिषाधयिषा. Of the two conditions therefore mentioned above, namely, non-ascertainment of साध्य and a desire to infer, either may suffice to constitute पक्षता. In a संशयोत्तरप्रत्यक्ष there is no such पक्षता, because the man and his करादि being perceived simultaneously there is no साध्य left to be ascertained and also no desire to infer it. The above definition of पक्षता, which is taken by Annambhaṭṭa from Tattva-Chintāmaṇi of Gaṅgeśa, is the most common one ; but it is open to an objection. When a man in the interior of the house hears a loud noise in the sky, he at once concludes it to be thunder. This is undoubtedly an inference, but there is no

पक्षता according to the above definition, because there is no सिद्धयभाव, the ascertainment of thunder instantly following the hearing of the sound ; nor is there any सिषाधायिषा on the part of the hearer, as there is no sufficient interval between the hearing and the अनुमिति for such a desire to arise. The whole operation is instantaneous and almost involuntary. *Annambhaṭṭa*'s definition would have the effect of excluding such inferences from the class of अनुमिति. Nor can they be प्रत्यक्ष, because the hearer being in the interior of the house never sees the clouds. Hence N. B. on Sect. 51, having stated the objection, remarks : प्राचीनलक्षणं विहाय नवीनैरनुमित्युद्देश्यत्वं पक्षत्वमिति स्थिरीकृतम्. This new definition of पक्षता adopted by the moderns in preference to the one accepted by *Annambhaṭṭa* is अनुमित्युद्देश्यत्वम् or अनुमितिप्रयोजनकत्वम्, which being very wide is not likely to exclude any thing. As regards the time-honoured definition it is necessary to add a remark of S. M. सिषाधायिषाविरहकाले यादृशसिद्धिसत्त्वेनानुमितिस्तादृशी सिद्धिर्विशिष्य तत्तदनुमितिप्रतिबन्धिका वक्तव्या,¹ that is, the ascertainment spoken of must be of the particular sort intended in the inference, so that although one might have ascertained fire upon a mountain from light, he should not be debarred from further inferring the same fire from smoke. In Sect. 51 further on पक्ष is defined as संदिग्धसाध्यवान् 'a thing on which the existence of साध्य is doubted ;' but the definition does not differ from the one given above as the word संदिग्ध implies both the absence of सिद्धि and the presence of सिषाधायिषा.²

9. पक्षधर्मता:—पक्षता being thus determined, it will be comparatively easy for the student to understand पक्षधर्मता the knowledge of which is said to constitute परामर्श. It is defined as (हेतोः) पक्षवृत्तित्वम्³ or पक्षसंबन्धः (V. V.) 'the residence of हेतु on पक्ष' ; but this does not convey the idea accurately. There are many things on the mountain such as trees and stones, but smoke alone is called पक्षधर्म because smoke alone leads to the inference of fire in the particular case. There

1 S. M. Calc. ed. p. 69.

2 For further remarks see Note on Sect. 51 *infra*.

3 B. P. 69.

may be other things such as light or burnt-up ashes which may equally conduce to an inference of fire; but they are irrelevant in an inference from smoke, and so are not पक्षधर्म. Again as all things on the mountain are not पक्षधर्म, so all smoke in the world is not also पक्षधर्म although the whole of it be वह्निव्याप्य. Only that particular line of smoke which is seen issuing from the top of the mountain is पक्षधर्म, because the knowledge of that alone is effective in giving an inference of fire on the mountain. All our previous knowledge about the invariable concomitance of smoke and fire will avail us nothing if we do not observe a particular धूमरेखा on the top of the mountain. This is the reason, as has been already pointed out, why परामर्श is defined as the knowledge of पक्षधर्मता, and not that of हेतु merely; for it is not any smoke but smoke when cognized as a धर्म of the पक्ष that produces अनुमिति. Nor is it sufficient to cognize smoke on any mountain, but the cognition must take place on a mountain which is a पक्ष, that is, which possesses the पक्षता as above defined. Hence पक्षधर्मता may be fully defined as पक्षतावच्छेदकावच्छिन्नविषयता which is paraphrased as सिषाध—सिद्धयभावरूपा या पक्षता तस्या अवच्छेदकं यत्पर्वतत्वं तेनावच्छिन्नो विषयो यस्य स धूमस्तत्ता, 'the smoke as conditioned by the mountain which determines in this case the sphere of पक्षता.' The knowledge of smoke so conditioned leads to अनुमिति when additionally qualified by a knowledge of the व्याप्ति. व्याप्तिविशिष्टपक्षधर्मताज्ञानम् cannot be dissolved, says *Nilakantha*, as व्याप्तिविशिष्टे वा पक्षधर्मता तस्या ज्ञानम्, 'cognition of पक्षधर्मता in a smoke that is already known to be वह्निव्याप्य.' This would accord with Aristotle's method, as has been already pointed out, which first states the व्याप्ति in the major premiss, and then realizes it in the thing denoted by the minor term but such a dissolution, says *Nilakantha* would exclude an inference of the वृत्तिरेकि kind which is always based on a contrary negative concomitance, and in which the पक्षधर्मता belongs not to the thing which is व्याप्तिविशिष्ट but to its contradictory. The compound therefore must be taken as a कर्मधारय, being dissolved व्याप्तिविशिष्टं च तत्पक्षधर्मताज्ञानं च, knowledge of पक्षधर्मता as qualified by the (knowledge of) व्याप्ति. Mere knowledge of पक्षधर्मता is obtained by perception when one sees the line of smoke on the mountain top, but it alone does not produce अनुमिति. It becomes परामर्श when combined

with a knowledge of व्याप्ति after व्याप्तिस्मरण. Hence the remark of T. D. व्याप्तिविषयकं यत्पक्षधर्मताज्ञानम्. Technically expressed व्याप्ति is not a विशेषण of पक्षधर्म (smoke), but a प्रकार of the पक्षधर्मताज्ञान; it is a property of the perceptive knowledge of smoke on the mountain, and not a quality of the smoke itself. The reason is obvious. व्याप्ति is a subjective conception, not a material quality residing in an external object such as smoke. धूम itself cannot therefore be व्याप्तिविशिष्ट, but धूमज्ञान can be व्याप्यवच्छिन्नप्रकारतानिरूपित. Hence the complete definition of परामर्श is व्याप्यवच्छिन्नप्रकारतानिरूपित—पक्षतावच्छेदकावच्छिन्न-विशेष्यताशाली निश्चयः (Nil.). (This परामर्श is illustrated in the cognition बह्विव्याप्यधूमवान् पर्वतः, which always precedes the अनुमिति 'पर्वतो बह्विमान्.')

10. There is no English word which can convey the exact notion of परामर्श. Ballantyne translates it by 'logical antecedent,' but the rendering is not appropriate. The expression 'logical datum' is also not very happy as it implies that परामर्श is an assumption made to serve a logical purpose and is not a necessary step in every natural process of thinking. The word परामर्श etymologically means *consideration*, but the latter word does not convey the full idea of परामर्श as used by the *Naiyāyikas*. It is however issued by Roer and Max Müller, and I have adopted it for want of a better one. For अनुमिति I have adopted the term *Judgment* on the authority of Whately,¹ while its instrument the अनुमान is denoted by *Inference*. व्याप्ति is 'invariable concomitance,' and not 'pervading inherence' as Roer renders it, because it is not an inhering attribute of a material object, but a relation of the notions of two things. There is a difficulty about the proper rendering of पक्ष. It is not correct to translate पक्ष by 'minor term' as Roer and others, probably misled by notions of Aristotelian logic, have done. 'Minor term' would be a proper equivalent for पक्षवाचक शब्द, and not for पक्ष itself. The rendering of पक्ष by 'subject' is perhaps better, as पक्ष like Aristotle's minor term is the subject in the conclusion, but it also is liable to misapprehension. I have therefore contented myself with the ordinary word

1. Whately *Elements of Logic* BE. ii, Ch. 1, 1.

'place' to express the idea of पक्ष. For the same reason it is misleading though not positively incorrect to translate हेतु by 'middle term,' as some have done. हेतु or rather हेतुवाक्य, as a part of the five-membered syllogism, can best be rendered by 'reason.' and corresponds to minor premiss, while लिङ्ग can be translated by 'sign'. Terms of the formal syllogism ought not to be indiscriminately applied to things which form part of the previous process of thinking. The same caution is required in applying other terms derived from European logic to their Sanskrit counterparts.

व्याप्तिः—The word व्याप्ति is perhaps the most difficult as it is also the most important term occurring in connection with the subject of inference. व्याप्ति has been translated as *invariable concomitance*; and the author defines it in the text as साहचर्यनियमः (invariability of concomitance) which means the same. But what does *concomitance* mean, and what does its *invariability* signify? The illustration (अभिनय) of व्याप्ति, "Wherever there is smoke there is fire," gives no doubt some idea of this invariable concomitance, but it does not furnish us with a sure test as to how व्याप्ति is to be found out and under what conditions it is valid. We must therefore further analyse the two notions involved in a व्याप्ति, viz. that of साहचर्य 'co-existence' or 'concomitance,' and that of 'universality' or rather the 'invariability' of this साहचर्य. साहचर्य is the सामानाधिकरण्य, co-existence in one and the same place, of द्रव्ये and साध्य; and when this coexistence of one thing with another is observed wherever the other thing exists, the साहचर्य is called नियत (नियमेन वर्तमानं) or invariable, and the thing so found co-existing is said to be व्यापक of the other thing. Thus fire is always found where smoke exists, and is therefore व्यापक of धूम; while as smoke is not always observed along with fire as in a red-hot iron-ball, smoke is not the व्यापक of वह्नि. There is no doubt a व्याप्ति between fire and smoke, but the व्याप्ति is of fire on smoke, and not *vice versa*; for fire, besides existing in all places occupied by smoke, exists in others where there is no smoke, and is thus more extensive. The व्याप्ति therefore not only means co-existence or concomitance, but also involves the idea of a greater extent. A व्यापक is

generally greater in extent than the व्याप्य, though not necessarily so; for in the exceptional case where both may be co-extensive, both are व्यापक and व्याप्य of each other. To cover this exceptional case *Naiyāyikas* define व्याप्ति simply as invariable co-existence, which is of course found both when the साध्य is greater than or equal in extent to the साधन.

12. The words *extent* and *extensive* are ambiguous as they are likely to be misunderstood in the sense of volume such as bulk or quantity or area. Thus a field of 20 acres would be said to be more extensive than another of 10 acres as it would include the latter and would still leave some of its parts unoccupied, but it is not व्यापक in the sense in which the term is used in *Nyāya*. This will be clear by another example. Of the two sums of 100 and 50 rupees respectively, the larger obviously includes the smaller, but a *Naiyāyika* would call the smaller sum the व्यापक of the larger, because it is found in a greater number of places than the other. The number fifty exists wherever there is the hundred, and in many other places, besides, e. g. where there are numbers between fifty and hundred. If for instance, we bring together twenty people having salaries above fifty, of whom only five get a hundred rupees or more, the sum of hundred occurs in five instances only while that of fifty is found in twenty. Fifty invariably co-exists with hundred, but not *vice versa*; and hence the *Naiyāyikas* would say that fifty is the व्यापक संख्या and hundred the व्याप्य संख्या. Any inference from hundred as a हेतु to fifty as a साध्य, such as A has fifty cows because he was seen with a hundred, would therefore be valid, so far as व्याप्ति is concerned. Of course, being *immediate* inferences, they may not perhaps be called deductions proper, but the व्याप्ति is true all the same. व्यापकत्व, therefore, though primarily involving the ideas of extension and inclusion, is often the opposite of them; for it is not the bigness of the thing itself, but the number of instances in which it is found that makes it व्यापक. Hence व्याप्ति is defined in terms of co-existence or concomitance, and not as extension or pervasion.

13. Except in the rare case where हेतु and साध्य are co-extensive, व्याप्ति is a unilateral relation between them; that

is, if any two things are taken, one of them is at once determined to be the व्यापक of the other, and their व्याप्यव्यापकभाव does not vary so long as the two things are taken in the same sense and with the same qualifications. The साहचर्यनियम is therefore the invariable co-existence of व्यापक with the व्याप्य and not *vice versa*; and as in a valid inference the साध्य must always be the व्यापक of हेतु, that is, must be more extensive than or at least co-extensive with the हेतु, the definition of व्याप्ति in T. S. must obviously be taken in a limited sense. This limitation is fully brought out in the enlarged definition of व्याप्ति given by T. D., हेतुसमानाधिकरणात्यन्ताभावाप्रतियोगिसाध्यसामानाधिकरण्यम्, which is explained by *Nilakanṭha* thus : वह्निमान् धूमादित्यादौ (सद्देतौ) धूमसमानाधिकरणोऽत्यन्ताभावः (घटात्यन्ताभावः) तदप्रतियोगी (वह्निः), तत्सामानाधिकरण्यं धूमेऽस्ति, इति कृत्वा लक्षणसमन्वयः. The सामानाधिकरण्य, according to this definition, is of the साध्य on the हेतु, i. e. of the व्यापक on the व्याप्य. But how do we know that the साध्य is the व्यापक ? To clear this doubt a qualification is added to the साध्य, that it must be ' a thing which is not a counter-entity (प्रतियोगी) of any absolute negation (i. e. an absolute negation of anything) co-existing with the हेतु.' Smoke for instance can co-exist with the अत्यन्ताभाव of घट, or पट, or in fact of every thing that is not necessarily associated with it; and hence those things are counter-entities of हेतु—भाव, while fire is not so, because there can be no smoke in the absence of fire. The expression समानाधिकरणात्यन्ताभावप्रतियोगि is nothing but a paraphrase of the word नियम which occurs in T. S., for the invariable presence of a thing is the same as the absence of its co-existent negation. Commentators however are not satisfied even with this circumlocution, for there is still a doubt as to whether the हेतु and साध्य are all things denoted by the words or only individual things referred to on particular occasions; or in other words, whether the smoke said to be वह्निव्याप्य is smoke in general, or the particular धूमरेखा observed on the mountain. That the former meaning is to be taken is made clear by the insertion of the word अवच्छिन्न; and the definition is thus enlarged : हेतुसमानाधिकरणात्यन्ताभावप्रतियोगितानवच्छेदकसाध्यतावच्छेदकावाच्छिन्न -- साध्यसमानाधिकरणवृत्ति -- हेतुतावच्छेदकत्वम् (*Nil.*). व्याप्ति is thus a धर्म of हेतु (हेतुतावच्छेदक) residing (वृत्ति) in a thing co-existent with a साध्य that is distinguish-

ed (अवच्छिन्न) by an अवच्छेदकधर्म (वह्नित्व) which characterizes the साध्य (i. e. resides in the साध्य), but does not pertain to a प्रतियोगी (प्रतियोगितानवच्छेदक) of any of the (countless) absolute negations coexisting with हेतु (धूम). This frightful periphrasis is intended to signify nothing more than that the व्याप्यव्यापकभाव lies between the *generalities* of fire and smoke and not between the individual वह्नि and धूम ; that is, fire is the व्यापक of smoke as fire in general and not as a particular fire in the kitchen or the hearth.)

14. Before adverting to the question how this व्याप्ति is known, it may be useful to consider a few

Various definitions of Vyāpti.

definitions of व्याप्ति, given by other writers, in order to further elucidate the *Naiyāyika*

notion of व्याप्ति, as well as to indicate briefly the general character and drift of the endless controversies carried on about it. There is in fact no other single topic in the *Nyāya* philosophy, which has evoked such an amount of subtle hair-splitting from scholastic disputants, as the definition of व्याप्ति. Whole works have been written for the purpose of settling a correct definition, and every writer of some pretensions has endeavoured to start a separate school advocating a particular definition. *Viśvanātha* gives two definitions of व्याप्ति, of which he prefers the second. He first defines व्याप्ति as साध्यवदन्यास्मिन्नसंबन्धः 'absence of the हेतु on any thing except the one having साध्य.'¹ But this definition is अव्याप्त as it does not apply in a केवलान्वयि अनुमान, such as इदं वाच्यं ज्ञेयत्वात्, where वाच्यत्व and ज्ञेयत्व being properties of all knowable things, there is no object that can be called साध्यवदन्य, and hence व्याप्ति in such cases cannot be known. Consequently this definition of the ancients is abandoned by modern writers. The other definition of *Viśvanātha* is हेतुमन्निष्ठविरहाप्रतियोगिसाध्यैकाधिकरण्यम्² which is identical with the one given by T. D., हेतुमन्निष्ठविरह corresponding to हेतुसमानाधिकरणात्यन्ताभाव. Here also, as in T. D.'s definition, the साध्यधर्म is to be understood as प्रति-योगितानवच्छेदक and साध्यतावच्छेदक.³ Again the सामानाधिकरण्य

¹ B. P. 67.

² P. B. 68.

³ See page 35 l. 4 and the preceding Note 13 on p. 246. *Supra*.

is to be by the same संबन्ध such as either समवाय or संयोग. Otherwise fire not residing in the parts of smoke by intimate union will not be समानाधिकरण with it. Now, an objector may ask, will not the definition be inapplicable to an inference like अयं कपिसंयोगी, एतद्वृक्षत्वात् where संयोग being an अव्याप्यवृत्ति गुण, both it and its अभाव are समानाधिकरण with the वृक्षत्व of the tree ? The answer is no, because it is a rule that अभाव and its प्रतियोगी are never एकाधिकरण. In this way rival disputants go on starting and answering objections, most of which are technical and scarcely add to the knowledge of the student.

15. व्याप्ति is divided into two sorts, अन्वयव्याप्ति and व्यतिरेक-
 Kinds of Vyāpti. व्याप्ति, of which the first again is of two kinds, पूर्वपक्षव्याप्ति and सिद्धान्तसिद्धव्याप्ति.¹

अन्वयव्याप्ति is the one already explained, where the साध्य has नियतसाहचर्य with हेतु. Its two subdivisions, पूर्वपक्षव्याप्ति and सिद्धान्तसिद्धव्याप्ति, seem to be invented chiefly for dialectical purposes and are of no scientific value. Each of these classes comprises a number of definitions arranged on a system of gradation, the simpler preceding the more difficult. Of these the सिद्धान्तसिद्धव्याप्ति are comparatively few and simple; but the other class comprises those on which Indian schoolmen like *Raghunātha* and *Gadādhara* have exhausted their whole dialectical ingenuity. The class of पूर्वपक्षव्याप्ति comprises in all twenty-one definitions, of which five form one group called पञ्चलक्षणी, fourteen another group called चतुर्दशलक्षणी, and the last two are independent, having the quaint names सिंहलक्षण and व्याघ्रलक्षण respectively. The five definitions in पञ्चलक्षणी together with the last two, being, like the first of *Viśvanātha* noticed above, based on the भेद or अभाव of साध्य, do not apply to केवलान्वयि inferences, and are accepted only by the school of *Gaṅgeśa*. The fourteen definitions comprising चतुर्दशलक्षणी are applicable to all the three kinds of inferences, as they are based on the doctrine that things might be as well defined by properties they do not possess as by those they do. The doctrine was first enunciated by *Saundaropādhyāya*, and is technically known as व्यधिकरणधर्मावाङ्मनाभाव. These details are quite sufficient

to frighten away an ordinary student from the tangled web of dialectic subtlety, named व्याप्तिवाद, that has been woven round the broad and quite intelligible rule, नियतसाहचर्यं व्याप्तिः. *Annambhaṭṭa* has wisely kept clear of all this mass of superfluous refinement by contenting himself with a simple definition suited to a manual for beginners.

16. The other kind of व्याप्ति is व्यतिरेकव्याप्ति and is the converse of the अन्वयव्याप्ति. व्यतिरेकव्याप्ति is explained by S. C. as व्यतिरेकः साध्याभावहेत्वभावयोः साहचर्यम् तत्प्रयोज्या (व्यतिरेकेण) व्याप्तिः.

*Anvaya-vyāpti and
Vyatirekavyāpti.*

Every अन्वयव्याप्ति has a व्यतिरेकव्याप्ति corresponding to it, because if व्याप्यव्यापकभाव exists between हेतु and साध्य, it must also exist between their negations taken in the inverse order. Thus if the proposition यत्र यत्र धूमस्तत्र तत्र वह्निः is true, its converse यत्र यत्र वह्निस्तत्र तत्र धूमाभावः must also be true. The difference between the two is that while in अन्वयव्याप्ति, साध्य is व्यापक and हेतु व्याप्य, in a व्यतिरेकव्याप्ति the हेत्वभाव becomes व्यापक, and साध्याभाव becomes व्याप्य. In other words the premise stands as if we are actually inferring धूमाभाव, from वह्निभाव. It is clear therefore that the same proposition यत्र वह्निभावस्तत्र धूमाभावः would be व्यतिरेकव्याप्ति if the resulting अनुमिति is पर्वतो वह्निमान्, and would be an अन्वयव्याप्ति if the अनुमिति is पर्वतो धूमाभाववान्, the in the latter case being वह्निभाव. *Udayana* accordingly defines व्यतिरेकव्याप्ति as साध्याभावव्यापकीभूताभावप्रतियोगित्वम्, which *Viśvanūtha* puts in simple language “साध्याभावव्यापकत्वं हेत्वभावस्य यद्भवेत्.”¹ There is much difference of opinion about व्यतिरेकव्याप्ति, which will be noticed when we come to the व्यतिरेकि अनुमान; but it may be remarked here that according to many Indian scholastics, and according to European logicians generally, व्यतिरेकव्याप्ति is not a different व्याप्ति but a mere restatement of the अन्वय obtained by a sort of conversion of the major premise. The process however is not simple conversion, but corresponds to what Prof. Bain calls *Obverted Conversion* or *Contraposition*. The predicate in a Universal Affirmative proposition being always more extensive than the subject, it requires to be either limited or *obverted* when the proposition is converted. Hence the conversion of an A proposition always requires two processes,

first *Obversion* and then *Conversion*. *Obversion* is the denial of the predicate, while *Conversion* is the transposition of the subject and the predicate. Thus to give Prof. Bain's own example of the *Obvertive Conversion* of an A proposition,¹

All X is Y

gives by *Obversion*

No X is not-Y

which by simple *Conversion* (of E) is

No not-Y is X.

Or

All men are mortal ;

by *Obv.* = No men are immortal ;

by *Conv.* = No immortals are men.

Now let us put the *Nyāya* stock-instance into the general form All X is Y, and we shall see how the same process gives us its व्यतिरेकव्याप्ति:—

यो यो धूमवान् स स वह्निमान् = All smoking things are fiery ;
By *Obv.* = यो यो धूमवान्

स स न बन्धुभाववान् = No smoking things are non-fiery ;

By *Conv.* = यो यो बन्धुभाववान्

स स न धूमवान् or

यो यो बन्धुभाववान् स धुमाभाववान्

} = No non-fiery things are smoking.

It will be thus seen that a व्यतिरेकव्याप्ति is only a repetition of the अन्वयव्याप्ति in another form of language, and consequently no change is made in the nature of the proof or in the अनुमिति by its substitution for the अन्वयव्याप्ति. Sometimes and especially in a केवलव्यतिरेकि inference where अन्वयव्याप्ति cannot be had it is very useful, and hence it has been recognized as a distinct species.)

1 Bain, *Deductive Logic*, p. 116.

SECT. XLV. स्वार्थ परार्थ च.

Inference is of two kinds:—One's Own and Another's. Of these. One's Own is the source of one's own inference; since a man having himself ascertained by frequent observation the generalization, wherever there is smoke there is fire as in a kitchen, approaches a mountain, and suspecting fire thereon and seeing smoke on the mountain, remembers the generalization, wherever there is smoke there is fire. Then the knowledge is produced that the mountain has smoke accompanied by fire. This is called Consideration. Thence arises the inference, viz. the knowledge that mountain is fiery. This is One's Own inference. When, however, after inferring fire from smoke oneself, a five-membered syllogism is employed to enlighten another person, it is Another's inference: e.g. Mountain is fiery, because it smokes; whatever smokes is fiery as a kitchen; this is so; hence this is fiery. By this means even another man apprehends fire from a sign (so) propounded.

1. The division of अनुमान into स्वार्थ and परार्थ, though not found in the aphorisms of Gotama or Kaṇva-
Inference for one-
self and for an-
other.
da is considerably old, being first mention-
ed in Prasastapāda's scholium. Ety-
mologically स्वार्थ and परार्थ respectively mean what is intend-
ed for oneself and what is for another (स्वस्य परस्य वा अर्थः प्रयो-
जनं यस्मात् तत्); but they can be better named Informal and
formal, or primary and secondary respectively. स्वार्थानुमान
is useful for removing one's own doubt, while परार्थानुमान is
employed when a conviction is sought to be produced in
the mind of another. परार्थानुमान therefore presupposes
and is based upon a स्वार्थानुमान, for one man cannot con-
vince another without being first convinced himself.
The distinction between the two is founded on the
presumption that as in a स्वार्थानुमान we deal with pre-
mises immediately known to us and derived from our own
experience, we do not require them to be stated with exact
formality, while in a परार्थानुमान, the premises which are
discovered by one man and imparted to another through
the medium of language are liable to be misunderstood
or misconstrued, and therefore require to be stated with
precision. The speaker cannot express himself fully and

clearly, or the hearer may be incapable of comprehending his meaning, or he may be misled by his own pre-conceived notions, or the words used may be ambiguous or incorrect, too general or too narrow in sense. There is in fact a greater likelihood of what we call fallacies of language being committed and other fallacies being disguised in a परार्थ than in a स्वार्थ अनुमान; and hence the condition is laid down in the former that each proposition must be stated in a prescribed form. The etymological sense of the two words has therefore merged into the later and more intelligible distinction between the two kinds of inference, namely, that परार्थानुमान is syllogistic or formal, and that स्वार्थ is the opposite of it. N. B. defines them as न्यायप्रयोज्य and न्यायाप्रयोज्य respectively, meaning that न्याय or syllogism is essential to a परार्थ but not to a स्वार्थ अनुमान. Similarly *Dharmottarācārya*, the commentator on *Nyāya-Bindu*, remarks परार्थानुमानं शब्दात्मकं । स्वार्थानुमानं तु ज्ञानात्मकमेव.¹ *Prāśastapāda* also says पञ्चावयवेन वाक्येन स्वनिश्चितार्थप्रतिपादनं परार्थानुमानम्.²

2. Of the two kinds the term अनुमान is properly applicable to the स्वार्थ only, for it is the real करण of अनुमिति. Whether we take the अनुमितिकरण to be लिङ्गज्ञान, व्याप्तिज्ञान or परामर्शज्ञान, it is undoubtedly ज्ञानात्मक as the स्वार्थ is, while परार्थ being शब्दात्मक should naturally fall under शब्दप्रमाण. But परार्थानुमान is included under अनुमान for the sake of convenience. The explanation given by the author of *Nyāya-Bindu* is कारणे कार्योपचारात्, 'the word अनुमान is used in a secondary sense to denote परार्थ which is वचनात्मक because the वचन (syllogism) is the cause of conveying to the hearer's mind लिङ्गज्ञान which is the real अनुमान.' The अनुमिति in a परार्थानुमान is the notion पर्वतो वह्निमान् generated in the hearer's mind. This notion is not conveyed to him directly by words as in शाब्दबोध, but he is made to infer it from a previous notion similarly conveyed by the words वह्निव्याप्यधूमवान् पर्वतः. This latter notion exactly corresponds to the परामर्श in a स्वार्थानुमान, and is likewise a combination of व्याप्ति and पक्षधर्मज्ञान. Hence the definition of अनुमिति, viz. परामर्शजन्यं ज्ञानम् applies to a vicarious (परार्थ) judgment as much as to an original (स्वार्थ) one. The real करण of this परार्थानुमिति is then

1 *Nyāya-Bindu-Tīkā*, Bibl. Ind., p. 21.

2 P. B. ed. p. 231.

the notion of परामर्श or व्याप्ति or लिङ्ग as comprehended by the hearer ; but we have no knowledge of this notion except through the न्याय or syllogism which produced it. Hence the अनुमितिकरणत्व which really belongs to the notion in the mind of the listener is attributed to its cause the पञ्चावयववाक्य by a sort of लक्षणा or उपचार. *Nilakanṭha* therefore remarks:—
यद्यपि परार्थानुमानशब्दस्य परस्य मध्यस्थस्यार्थः प्रयोजन साध्यानुमितिरूपं यस्मादिति द्युत्पत्त्या परसमवेतानुमितिकरणलिङ्गपरामर्शोऽर्थः । अत एव स्वार्थानुमितिपरार्थानुमित्योर्लिङ्गपरामर्श एव करणमित्याद्यग्रिममूलमपि साधु संगच्छते । तथापि परार्थानुमानप्रयोजके पञ्चावयववाक्ये परार्थानुमानशब्दस्यौपचारिकः प्रयोग इति मनसिकृत्य मूलमवतारयति. *Nilakanṭha* means that the author is not inconsistent in calling here the पञ्चावयववाक्य the परार्थानुमान, and again in stating subsequently that लिङ्गपरामर्श is the करण of both स्वार्थ and परार्थ अनुमिति, because the use of the word परार्थानुमान to denote the syllogism is only secondary. Except in this one particular, both kinds of inferences agree in all respects, and the same rules and conditions apply to both equally. The distinction between the two is useful for no other purpose than to emphasize the fact that, though in practice the syllogistic form, *i. e.* the परार्थानुमान, absorbs almost all our attention owing to its being subject to rules of logic, the mental process called स्वार्थानुमान, whether original or induced by words in the hearer's mind, constitutes the real inferential operation. Practically every mental operation can be clothed in words, while on the other hand every syllogism presupposes a mental inference ; so both are one, or rather they form two parts of the same process of inference. Consequently Aristotle takes account of syllogism only, ignoring the स्वार्थानुमिति altogether, and the *Naiyāyikas* also have done the same. Prof. Max Müller is therefore totally wrong when he remarks:—
“ What is called by *Annambhaṭṭa* the conclusion for oneself, corresponds *totidem verbis* with the first form of Aristotle's syllogism. What is called the conclusion for others seems more irregular on account of its five members, and of the additional instances which seem to vitiate the syllogism.¹ It appears that Prof. Max Müller like many other Western scholars failed to understand the real significance of the division of स्वार्थ and परार्थ.

¹ Thomson's *Laws of Thought* Appendix p. 293.

3. *Annambhaṭṭa* gives a circumstantial and fairly accurate description of the process by which we first infer fire on a smoking mountain, and then communicate our knowledge to another in the same order. We first observe smoke on the mountain, then suspect that there is fire, and then remember the व्याप्ति; at last joining this व्याप्तिस्मरण with the पक्षधर्मज्ञान got by actual perception, we obtain the complex परामर्श denoted by वह्निव्याप्यधूमवान् पर्वतः. This परामर्श is variously called लिङ्गपरामर्श or तृतीयलिङ्गपरामर्श. S. C. explains the former term as व्याप्तिबलेन लीनमर्थं गमयतीति लिङ्गं तच्च धूमादिस्तस्य परामर्शो ज्ञानविशेषः 'knowledge of लिङ्ग in the peculiar form defined as a परामर्श.' It is also called तृतीयलिङ्गपरामर्श because it is the last of the three cognitions of smoke that are requisite for the inference of fire. The first cognition is the knowledge of smoke as associated with fire in the kitchen room (महानसादौ); the second is the perceptive knowledge of smoke on the mountain and the third is the complex and derived knowledge of the same smoke as invariably concomitant with fire.¹ This परामर्श necessarily gives birth to स्वार्थानुमिति. When this process is put in the form of a syllogism for the edification of another it becomes a परार्थानुमान.

4. There are however other classifications of अनुमान which are based on real distinctions. *Gotama* divides अनुमान into three kinds:—पूर्ववत्, शेषवत् and सामान्यतो दृष्ट.² This division appears to be the most ancient as well as the most generally accepted. पूर्ववत् is पूर्वं कारणं तद्वत्, कारणलिङ्गकमि-नर्थः 'reasoning from cause to effect,' as an inference from the appearance of thick clouds that a shower of rain will ensue, because clouds are known to cause rain. शेषवत् is शेषः कार्यं तद्वत्, कार्यलिङ्गकं, यथा नदीवृद्ध्या वृष्ट्यनुमानम्, an inference of a past shower of rain from the overflow of the river, because the latter is known to be the effect of the former. सामान्यतो दृष्ट comprises all other inferences that are neither from cause to effect nor from effect to cause. *Vātsyāyana* adds another interpretation of the words, according to which the distinctive marks of the three varieties differ slightly. Accord

1 S. C. *loc. cit.* and T. K. Bom. ed. p. 10-1.

2 G. S. 1, 1, 5.

ing to this second interpretation,¹ पूर्ववत् is an inference from a precedent, *i. e.*, an inference of one from the other of two things that were formerly observed to be closely associated together. The ordinary inference of fire on the mountain from smoke, and in fact all deductions proper are of this kind. शेषवत् is the inference by elimination, *i. e.* the determination of an object to be something because it is not any other thing, just as sound is proved to be a quality because though a product it is neither substance nor action. सामान्यतो दृष्ट is the deduction of the nature of an invisible thing from a general law previously known, such as the law of causality. Soul for instance is invisible, but its existence is proved by the necessity that बुद्धि and other qualities must reside in a substance according to the general law that every quality must have a substratum. सामान्यतो दृष्ट is thus in one sense opposed to पूर्ववत्, the latter, as *Vācaspati* remarks, being दृष्टस्वलक्षणसामान्यविषय, while the former is अदृष्टस्वलक्षणसामान्यविषय.² पूर्ववत् is the inference of an object whose peculiar property (स्वलक्षण), which is also the common characteristic (सामान्य) of its class such as the बह्वि of बह्वि, is previously observed (दृष्ट), while the स्वलक्षण of an invisible object inferred by सामान्यतो दृष्ट is never perceived. *Vācaspati* classes these two kinds under one head, वीतानुमान, that is, an inference through an affirmative generalization (अन्वयव्याप्ति); while शेषवत् differs from them both in being based on a negative generalization (व्यातिरेकव्याप्ति).

5. Another division of अनुमान is into three kinds, केवलान्वयि, केवलव्यातिरेकि, and अन्वयव्यातिरेकि, the *fundamentum divisionis* being the affirmative or negative character of the हेतु or rather of the व्याप्ति. A judgment derived from an अन्वयि हेतु or a व्यातिरेकि हेतु alone is केवलान्वयि or केवलव्यातिरेकि, while one to which both kinds of हेतु are applicable is उभय or अन्वयव्यातिरेकि. The difference between this classification and the former one is that while the former is based partly on the nature of the conclusion or अनुमिति, and partly on the mode of reasoning employed, the latter is entirely based on the character of the करण or हेतु. The

1 *Vat.* on G. S. I, 1, 5.

2 *Sāṅkhya-T. K.* p. 16.

distinction of अन्वय and व्यतिरेक pertains to the हेतु alone and not to the resulting *judgment* which is the same whether derived from an अन्वयि or a व्यतिरेकि हेतु. *Annambhaṭṭa* therefore very properly treats this last classification as a division of लिङ्ग and not that of अनुमान.¹) The first classification also seems to have rather gone out of fashion with the modern school of *Naiyāyikas*, owing probably to its vagueness and want of a common principle of division. The distinction between स्वार्थ and परार्थ inferences was probably invented by the *Vaiśeṣikas*.

6. *Praśastapāda* sub-divides स्वार्थ अनुमान into दृष्ट and सामान्यतो दृष्ट, the difference between the two being that, in दृष्ट the inferred thing is exactly of the same kind as its prototype, as when we infer a cow from our previous knowledge of cows having dew-laps, while in सामान्यतो दृष्ट a property is inferred in a thing from its observation in a quite different kind of thing, as causality is inferred in dead matter because it is observed in animals.² There is probably a confusion of ideas here, for the illustration of दृष्ट is more like a case of सविकल्पप्रत्यक्ष or a mere स्मरण than an inference proper, while the example of the second is only a particular application of the general method of inference as described above.

7. Having noticed the different kinds of अनुमान mentioned by Sanskrit writers, it will be useful to compare these classifications with those of Aristotle and the modern European logicians. The most obvious defect in the *Nyāya* system and one that has been chiefly dwelt upon by its European critics is the non-recognition of anything corresponding to what we now call inductive reasoning. The same objection formed the gist of Lord Bacon's indictment against Aristotle and the logic of mediæval schoolmen; but a closer study of Aristotle's work has now shown that he did not actually ignore induction but attached less importance to it than we are prone to do now. The same thing is true of the *Nyāya* system. Like Aristotle, *Naiyāyikas* were aware of the

1 See Sect. 48. Notes 3 & 4 p. 287. *Infra*.

2 P. B. Ben. ed. p. 205.

inductive method, but considered it as subservient to the purposes of deduction which was the अनुमान proper. Every deduction is based on a generalization, and this generalization is obtained by an accumulation of particular instances by a process known as induction. A *Naiyāyika* would therefore value induction only as a means for discovering व्याप्ति which is necessary for a proper अनुमान. How then is this Induction treated of in the *Nyāya* system? To get an answer to this question we must consider the *Naiyāyika* doctrine as to how a व्याप्ति is obtained.

8. It will be remembered that व्याप्ति was defined as नियत-साहचर्य of हेतु and साध्य; and the exact meaning of this phrase was also explained. But how are we to make ourselves sure of this नियतसाहचर्य? What is in fact the means of arriving at, and the test of determining this invariability of concomitance? *Annambhaṭṭa* supplies the answer to this question in Sec. 45. (In describing स्वार्थानुमान he says that व्याप्ति is obtained by repeated observation of the association of fire with smoke, or in other words by the accumulation of numerous instances in which this association is found. But this would certainly not suffice to give us a valid व्याप्ति. Observation of a fact, howsoever often repeated, is no guarantee against the possibility of the existence of a contrary fact. We may observe the association of fire and smoke in ninety-nine cases, but we cannot from thence conclude that it must exist in the hundredth case also. It is impossible for one man to examine all the cases of a particular nature, and our widest generalizations are therefore based on a limited number of instances. The possibility of a contrary fact, therefore, still remains and the व्याप्ति remains at best a doubtful hypothesis. To prevent this व्यभिचार, T. D. adds that the knowledge of साहचर्य produces व्याप्ति not by itself, but when combined with the absence of the knowledge of व्यभिचार (contradiction). The नियम of साहचर्य which constitutes व्याप्ति is therefore defined as अव्याभिचारित्व, 'absence of any contradiction;' that is, in order to know व्याप्ति not only is it necessary to observe the association of fire and smoke in numerous instances, but there must not also be a single instance in which smoke is found

dissociated from fire. साहचर्यज्ञान and व्यभिचारज्ञानविरह are therefore the two causes of the knowledge of व्याप्ति, and as such correspond to the Method of agreement and the Method of difference that are employed in Induction. These two are not however collateral or independent causes of व्याप्ति, but the latter is subservient to the former, and both constitute one joint cause. The process therefore closely resembles Mill's Joint Method of agreement and difference.¹

9. Now व्यभिचारज्ञान may be the certainty of a contrary fact or a mere suspicion, because both are equally effective in destroying the certainty of व्याप्ति. Again, the व्यभिचारनिश्चय may be well-grounded; or ill-grounded; if the former, it is true, and the व्याप्ति is invalid. If it is ill-grounded, or if there is only a suspicion of व्यभिचार, it can be dispelled either by reasoning or by a sort of intuitive knowledge. Instances of the latter are what we call necessary truths, such as the axioms of Geometry which are self-evident and require no proof. When they are not so, they can be proved to be true by the *reductio ad absurdum* method of reasoning which is called तर्क in Nyāya.² Take for example the व्याप्ति, यत्र धूमस्तत्र वह्निः. If this is not true, its contradictory, viz. that smoke is sometimes not accompanied by fire, must be true. Then in those cases where smoke is found without fire, it must have for its cause something else. Hence fire is not the invariable antecedent of smoke and it cannot therefore be its cause, which is inconsistent with our knowledge that fire is the cause of smoke. The conclusion being thus absurd, the assumption from which it was derived must be wrong; and its contradictory, namely the व्याप्ति, must be right. In this way by means of an assumed hypothesis (तर्क), which when carried to its legitimate conclusion leads to कार्य-कारणभङ्ग of fire and smoke, we prove the invariable concomitance of those two things. The *reductio ad absurdum* reasoning consists in taking for granted an hypothesis exactly opposite to the proposition to be proved and then drawing from it a conclusion which is evidently false, and

1 Mill : *System of Logic*. People's Ed. p. 259.

2 See Sec. LXIV Note 3, p. 361 *infra*.

the falsity of which vitiates the hypothesis and thus proves its contradictory. In this way व्याप्ति too may be said to be indirectly obtained by अनुमान.) In the particular instance of fire and smoke, we can indeed derive the generalization of their invariable concomitance from a still wider generalization, namely the law of causality, by the direct syllogistic method, thus:—

Every effect is invariably associated with its cause ;

Smoke is the effect of fire ;

∴ Smoke is invariably associated with fire.

But this syllogism is quite different from the तर्क described above and is practically useless as it involves an argument in a circle. If smoke is invariably associated with fire, because it is the effect of fire, how do we know that it is such an effect ? This कार्यकारणभाव of smoke and fire can only be deduced from the observed invariable concomitance of the two, and hence the syllogism is defective as assuming a minor premise that is really derived from the conclusion. The व्याप्ति therefore must ultimately rest on the सादृश्य with its accessary व्याभिचारज्ञानविरह.)

10. The तर्क by which व्याप्ति is obtained finds its analogy in Aristotle's system where he attempts

Inductive syllogism.

to prove that induction is only a variety of syllogism. The central idea of the syllogism, as defined by Aristotle, is that of a conclusion following from given premises by *necessary* sequence,—an idea, by the way, which is already implied in the *Naiyāyika* doctrine that परामर्श is the करण of अनुमिति. To bring induction under syllogism it must be shown that the generalization follows as a *necessary* consequence from the premises, viz. the accumulation of particular instances. The proposition for instance that all bile-less animals are long-lived is deduced from particular cases of a horse, an ass, etc. Here Aristotle assumes that we have ascertained the attribute to belong to *all* the particulars, and that the inductive inference consists merely in passing from all of them to the class-term, *animal*. The passage from premises to conclusion is here necessary, for to grant the premise and yet to deny the conclusion involves a contradiction, *i. e.* the तर्क of *Nyāya*. The fallacy of this reasoning evidently lies in

the deduction *per saltum* from a few particulars to the whole-class. Mr. Grote's criticism on it is so just and so pertinent to our subject that the passage is worth quoting:--

"We can never" says Grote "observe *all* the particulars of a class, which is indefinite as to number of particulars and definite only in respect of the attributes connected by the class term. We can only observe *some* of the particulars, a greater or smaller proportion. Now it is in the transition from these *to* totality of particulars that the real inductive inference consists; not in the transition *from* the totality to the class-term which denotes totality and connotes its determining common attribute. In fact the distinction between the totality of particulars and the meaning of class-term is one not commonly attended to; though it is worthy of note in an analysis of the intellectual process, and is therefore brought to view by Aristotle." 1

11. This is exactly what is implied in the objection stated in T. D. सकलवह्निधूमयोरसंनिकर्षात्कथं व्याप्ति-
The Nyāya ex- ग्रहः. The objection shows that the *Naiyā-*
pedient. *yikas* clearly saw the error into which Aristotle fell, and they tried to escape from it in a way peculiar to themselves. The difficulty is two-fold. In the first place, there is the obvious impossibility of our observing *all* the particulars denoted by the class-term (*e. g.* धूम); and secondly, even granting that we have ascertained *all* the cases, how do we arrive at the general notion of व्याप्ति, comprising those cases but certainly distinct from them? धूम-वह्निसाहचर्य may be seen to exist in this case, and in that, and in a third, and so on; but how do we get the superadded knowledge that it exists everywhere? The notion of *everywhere* is distinct from and additional to the totality of particular cognitions. The expedient by which this two-fold difficulty is avoided by the *Naiyāyikas* is very characteristic, and at once distinguishes them from Aristotle, who regards induction as a mode of syllogism, and also from modern logicians like Mill, who regard it as an independent method of reasoning. J. S. Mill defines Induction as "that operation of the mind by which we infer that what we know to be true in a particular case or cases will be true in all cases which resemble the former in certain assignable respects."² Like Deduction Induction too is a process of

1 Grote's *Aristotle*, Vol. I, p. 278.

2 Mill; *System of Logic*, People's Ed., p. 188.

inference, proceeding from the known to the unknown, the unknown in its case being the general notion which is derived from the known particulars. *Naiyāyikas* however will not accept this, because they regard Induction not as an inference but as a kind of *extraordinary perception* (प्रत्यासत्ति). T. D. says that although we can never actually observe all the cases in which fire is associated with smoke, the invariable concomitance obtaining between the class fire and the class smoke is known by the अलौकिकप्रत्यक्ष called सामान्य-लक्षणा प्रत्यासत्ति. This kind of *extraordinary perception* has already been explained as the process by which after perceiving an individual thing such as a घट, we at once cognize its जाति घटत्व, by the law of association. When two things are closely associated together, the perception of one necessarily leads to the immediate apprehension of the other. This is not an inference, for there is neither परामर्श, nor any हेतु. It is not also ordinary perception, because there is no इन्द्रियसंनिकर्ष with smoke in all the cases. The process is therefore something intermediate between perception proper and inference proper, *quasi*-perception, or a *quasi*-inference. प्रत्यासत्ति is thus a kind of *immediate* inference, and is therefore more akin to perception than to अनुमान which is concerned with *mediate* truths only. But how is this explanation to be reconciled with the preceding statement of T. D. that व्याप्ति is proved by तर्क or *reductio ad absurdum* mode of reasoning? The answer is that it is not व्याप्ति that is known by तर्क or any other syllogistic mode of reasoning, as Aristotle seems to say, but it is the व्यभिचारविरह that is so known. व्याप्ति is directly produced by साहचर्यज्ञान which is the result of actual perception, while the तर्क which proves व्यभिचारज्ञान-विरह is accessory to it only so far as it dispels all doubts, and makes the knowledge of साहचर्य a certainty. It is not therefore correct to say that *Naiyāyikas* did not know Inductive reasoning. They were quite aware of it and have even described it pretty accurately; but they included it under प्रत्यक्ष. This is quite clear from *Keśava Miśra's* statement, तथा च सत्युपाध्यभावजनितसंस्कारसहकृतेन भूयोदर्शनजनित-संस्कारसहकृतेन साहचर्यग्राहिणा प्रत्यक्षेणैव धृमाग्न्योर्व्याप्तिरवधार्यते.¹ अनु-मिति is essentially a *mediate* judgment, and cannot therefore

¹ T. B. Pom. ed. p. 35.

include a generalization which is known *immediately*. Again this generalization has no use of its own beyond serving as a basis for a further deduction. Whether they were wrong or right in thus excluding Induction from inference proper is a different question, and need not occupy us here.)

12. Other varieties of अनुमान mentioned in a preceding note may also find their equivalents in European logic. *Corresponding varieties in Indian and Western logic.* पूर्ववत् is deduction proper; while सामान्यतोद्घट is either a deduction, or induction in the wider sense of the term used by Mill, namely, inference 'from several particulars, not to a generality, but to a distinct particular. शेषवत् is the process of elimination, which closely resembles Plato's method of *Logical Division*. Aristotle regarded *Logical Division* as only a fragment of the syllogistic process; and similarly *Naiyāyikas* class शेषवत् under व्यतिरेकि अनुमान¹. The three-fold division of अनुमान into अन्वयि, व्यतिरेकि and उभयि chiefly concerns the हेतु, and is sufficiently accounted for by the obversion and conversion of propositions².

SECT. XLVI. पञ्चावयवाः.

The five members are:—1 Proposition, 2 Reason, 3 Examples, 4 Application and 5 Conclusion. Mountain is fiery,—this is Proposition. Because it has smoke,—this is Reason. Whatever smokes etc.—this is Example. This is like it,—this is Application. Hence it is so,—this is Conclusion.

1. Having distinguished the परार्थानुमान from the स्वार्थ in the preceding section, the author now goes on to enumerate its five component parts. परार्थानुमान is technically called a न्याय, which is defined as क्रमिकप्रतिज्ञादिसमुदायः 'collection of the five propositions, प्रतिज्ञा etc. in a regular order.' Gaṅgeśa defines न्याय more accurately as अनुमितिचरमकारणलिङ्गपरामर्शप्रयोजकशब्दज्ञानजनकवाक्यम्, 'a proposition or a series of propositions producing the

1 Visvanātha: Gotama-Sūtra-Vṛtti, 1, 5.

2 See Note 16 under Sect. 44, p. 251, *Supra*.

verbal knowledge which gives rise to the परामर्श (i. e. in the hearer's mind) which is the last and immediate cause of अनुमिति. In other words न्याय is a series of propositions that produce in another's mind the same kind of पञ्चमस्ताज्ञान as has already been produced in the speaker's mind by his own mental reasoning.) This fairly corresponds to Aristotle's notion of *sylogism* which is defined "a *speech* (or enunciation) in which certain things (the premises) being supposed, something different from what is supposed (i. e. the conclusion,) follows of necessity; and this solely in virtue of the suppositions themselves." ¹ Unlike Aristotle however who gives three premises to the syllogism, (the *Naiyāyikas* make it consist of five parts or limbs (अवयव), namely, *Assertion* (प्रतिज्ञा), *Reason* (हेतु), *Proposition* or *Example* (उदाहरण), *Application* (उपनय) and *Deduction* or *Conclusion* (निगमन). *Assertion* is defined as साध्यनिर्देशः 'the declaration of the साध्य as existing on the पक्ष' ² or साध्यवत्तया पक्षवचनं, as T. D. puts it, 'speaking of पक्ष as possessing the साध्य.' Its purpose is to prepare the hearer beforehand as to what thing he should expect to be proved by the syllogism, and it is therefore analogous to the *Problema* or *Questio* of the older European logicians. After the *Assertion* is made, one is naturally tempted to ask, whence, or why, or what evidence; and their answer to this query is the *Reason* which declares the mark or evidence that proves the existence of साध्य on पक्ष, and which is generally but not necessarily in the ablative case. Every word in the ablative is of course not a हेतु, as for instance, in the sentence अयं न दण्डात् । दण्डसंयोग-जन्यद्रव्यत्वात्, दण्डात् is not a हेतु, although the word is in the ablative, because it does not declare the लिङ्ग. Here it may be remarked that the two words हेतु and लिङ्ग, though often used indiscriminately, slightly differ in meaning, लिङ्ग being the *mark* such as घूम, while हेतु is the लिङ्गप्रतिपादकवचन 'the sentence which declares that mark.' The लिङ्ग as expressed in the हेतुवाक्य may be similar or dissimilar to the साध्य, and thus the हेतु is of two kinds अन्वयि

¹ Aristotle *Prior. Analyt.* Bk. i, Ch. 1, Sec. 7.

² G. S. I, 1, 33

and व्यतिरेकि. When the *Reason* is given, the question would naturally arise, (Why should the लिङ्ग prove that साध्य, or in other words, what connection can there be between the fire and the smoke which makes us infer the one from the other ? To satisfy this query, the third premise दृष्टान्त or उदाहरण is employed to show the invariable concomitance of fire and smoke. Well, says the objector, let there be this invariable concomitance, but how is it relevant to the point before us ? To show this the व्याप्ति is incorporated with प्रतिज्ञा and हेतु and the combination results in परामर्श which is expressed by the fourth sentence, Application or उपनय. The last, viz. Conclusion, brings together all these several elements into one proposition, and thus enables the hearer to comprehend the result at once. निगमन is defined by Gotama as the repetition of the प्रतिज्ञा as proved by the हेतु,¹ and Vātsyāyana explains it as निगम्यन्ते समर्थ्यन्ते संबध्यन्तेऽनेन प्रतिज्ञाहेतुदाहरणोपनया एकत्रेति निगमनम्. Its purpose, says T. D., is to exclude the possibility of any uncertainty or contradiction as to the existence of साध्य. The last three will be obviously either positive or negative according as the हेतु is अन्वयि or व्यतिरेकि.

2. The forms of these five premises are also settled by convention. First there is the Assertion

The five pre-
mises.

पर्वतो वह्निमान्, in which the पक्ष (पर्वत) is the subject, and the साध्य is spoken of as its property. The *Reason* is generally in the ablative, but sometimes in the instrumental also. The व्याप्ति or Proposition has two forms ; in one the साध्य and साधन whose concomitance is spoken of are used as properties of their common substratum, which is the subject in both the principal and the relative sentences, as in यो यो धूमवान् स वह्निमान् ; while in the other form the substratum is put in the locative and the साध्य and साधन are expressed in the nominative, as in यत्र यत्र धूमस्तत्र तत्र वह्निः. Of these the first is preferred as agreeing with the form of other premises, although the second expresses the व्याप्ति better and more naturally. The उपनयवाक्य has of course the पक्ष for its subject with the साध्यव्याप्यहेतु as its qualifying attribute, and it is indicated by the general formula तथा चायम्, अयम् denoting the पक्ष and तथा its qualification. The निगमन does not

differ in form from the प्रतिज्ञा, but that it is different in reality is plainly indicated by its formula तस्मात् तथा, in which तथा denotes the sense conveyed by the प्रतिज्ञा, and तस्मात् sums up the result of the intermediate premises.)

3. The five-membered न्याय as described above considerably

*The Indian and
the Aristotelian
syllogisms com-
pared.*

differs from the tripartite syllogism of Aristotle, but a little consideration will show that the difference lies more in the form than in the essence in which the

two have been shown to agree remarkably. The most obvious distinction between the two syllogisms is of course the different number of premises, which are five in one and three in the other; and as both give equally valid conclusions, one is naturally tempted to conclude that either two premises in the one must be superfluous or the other must be defective to that extent. As a matter of fact, neither alternative is true. Human mind being alike everywhere, it is no wonder that philosophers in the East and the West independently followed the same laws of thought and adopted the same process of reasoning. But though there is no difference in our thinking process, there is much in our respective modes of conveying our thoughts to other

Hence is it that while the essential requisites of a valid inference are the same according to both Gotama and Aristotle, their manner of clothing those essentials in the form of premises varies considerably. Aristotle's premises are nothing more than the absolutely necessary constituent parts of an inference connected together by the slender tie of mere juxtaposition. The limbs of the Naiyāyika अनुमान on the other hand constitute a fully reasoned out argument whose parts follow one after another in their natural sequence. Aristotle's premises are as it were a simple enumeration of the several steps in a deductive reasoning; the Sanskrit न्याय is a regularly constructed debate in miniature. Aristotle's syllogism only furnishes the skeleton, and the reader or hearer fills up the interstices; in its Sanskrit counterpart, the speaker himself goes through all the steps and the hearer has only to follow him. Thus one is rather analytical or demonstrative, the other is expository and rhetorical. The न्याय is more useful in discovering the

conclusion ; Aristotle's syllogism is better fitted to test its validity. Each has a different purpose and is best suited to achieve it. In this respect, the Sanskrit न्याय is more akin to the rhetorical mode of argumentation which was so popular with the Sophists before Aristotle and which attained its height in the Socratic method of cross-examination and Plato's Dialectics.

4. A Sanskrit न्याय is in fact nothing but a model dialogue in which the questions of one party are omitted and are to be inferred from the answers given. The five-membered syllogism is

The Nyāya.

designed to convince a doubting adversary who asks questions and raises objections at each step, which questions and objections are answered by the successive premises. It is in fact an axiom with the *Naiyāyikas* that there can be no argumentation without an आकाङ्क्षा, a sort of doubt accompanied by a desire to have it solved. But how can there be an आकाङ्क्षा in the beginning when the debate is not yet commenced and neither of the disputants has spoken. This आकाङ्क्षा is therefore artificially created by the dogmatic assertion (प्रतिज्ञा) of the proposition that is to be ultimately proved. Gaṅgeśa in his *Tattva-Cintāmaṇi* expressly says “कथयामाकाङ्क्षाक्रमेणाभिधानमिति प्रथमं साध्याभिधानं विना ‘कुतः’ इत्याकारकहेत्वाकाङ्क्षाभावात् प्राथम्येन प्रतिज्ञाप्रयोगः.” This is the reason why the Sanskrit न्याय begins with प्रतिज्ञा and not, like Aristotle's syllogism, with the व्याप्तिवाक्य or major premise ; for the व्याप्ति ; being an undisputed generalization, will not give rise to any आकाङ्क्षा or doubt, and so the argument would never proceed. The Sanskrit syllogism seems to be purposely framed so as to keep this आकाङ्क्षा alive until the conclusion is reached. The five members of the Sanskrit न्याय thus form a series of doubts and answers in a logical sequence, and the परार्थानुमान formed by them is a demonstrative deduction mainly intended for the enlightenment of another.

5. The five-membered argument has been subjected to much undeserved criticism, both for and against it. Those seeking brevity and compactness censure it as being a rude and clumsy form of syllogism, while others prefer it to the

The five-membered syllogism criticized.

Aristotelian syllogism as exhibiting "a more natural mode of reasoning than is compatible with the compressed limits of the syllogism." ¹ Both the praise and the blame however are only partially true. The five-membered *Nyāya* reflects no doubt more accurately the actual method followed in a debate, but it is for that very reason unsuited to be a test of the validity of the reasoning. The five-membered form is much more loose and affords greater facilities for fallacies to creep in undetected than the compact Aristotelian syllogism. It does not provide fully for the correct indication of the quantification, qualification and modality of each proposition. The distinction between Universals and Particulars is not observed, while the distinction between Affirmative and Negative is only partially recognized in the form of *अन्वय* and *व्यतिरेक*. Consequently there are no figures and no moods. Aristotle starts from the generalization and inquires what conclusion can be legitimately deduced from it. He is therefore obliged first to determine the exact scope of the proposition that stands as the *major premise* and so the most common fallacies, such as the *Petitio Principii*, which generally underlie the *major premise*, are at once excluded. Not so with the *Naiyāyika* who starting with the conclusion as a *प्रतिज्ञा* and having to find out a *व्याप्ति* most suited to prove it, does not pay much heed to the wording of the *उदाहरण* or of any other premise so long as his meaning is intelligibly conveyed. It would in fact have been impossible to raise upon the five-membered *Nyāya* the splendid superstructure of Deductive Logic that Aristotle has constructed on the basis of his syllogism. On the other hand as a controversial weapon, the five-membered syllogism is far superior to that of Aristotle, since it forces the debate to run in a particular channel, and thus prevents the adversary from straying away from the point.

6. It is also very well adapted for the exposition of simple truths to the uninstructed mind, as it requires no assumption and does not tax the brain at all. The best illustration of this is to be found in Euclid's geometrical theorems. Euclid's method closely resem-

¹ Sir G. Haughtan's *Prodromus* p. 215, quoted in Ballantyne's *Lectures on Nyāya Philosophy*.

bles the five-membered syllogism. First, there is the *hypothesis* or *enunciation* (प्रतिज्ञा) that all the angles of a triangle are equal to two right angles. The three angles together constitute the पक्ष, and the equality to two right angles is the साध्य. The *particular enunciation* and the *determination* are only a special application of the facts declared in the hypothesis. Strictly speaking the *particular enunciation* is the real प्रतिज्ञा while the *hypothesis* is a further generalization derived from it. Then comes the *demonstration* which first gives reasons (हेतु) and then quotes authorities (उदाहरण). The *demonstration* ends with a summing up corresponding to परामर्श and introduced by 'Where'; lastly comes the *conclusion* (निगमन) beginning with 'Therefore,' and identical with the *enunciation*. The whole is then wound up with a flourish of trumpets in the shape of a *Quod erat demonstrandum* (Q. E. D.). Euclid employed the dialectical syllogism prevailing before Aristotle, as most suited to his purpose; and a similar one was adopted by the Indian Pandits in instructing their pupils.)

7. As already noted, the five-membered syllogism, notwithstanding the difference of form, is essentially the same as that adopted by Aristotle and the modern European logicians. In a legitimate syllogism, says J.

Essential components of the syllogism.

S. Mill, 'it is essential that there should be three and no more than three propositions, namely, the conclusion and the two (*major* and *minor*) premises. It is also essential that there should be three and no more than three terms, namely the *major* and the *minor* terms which respectively form the predicate and subject of the conclusion, and a third one named the *middle term*, which acts as a link between the two. Similarly there are three and no more than three terms in a Sanskrit Nyāya, namely, the साध्य the *major* term and predicate of the conclusion, पक्ष the *minor* term and subject of the conclusion, and लिङ्ग the *middle* term, which being cognized as a पक्षधर्म acts as a link to connect the साध्य with the पक्ष. But what about the three and no more than three propositions that form the syllogism? A little examination will show that

1 Mill : *System of Logic*, People's Ed. p. 108.

they too have their counterparts in the five members of the *Nyāya*. The निगमन and प्रतिज्ञा are the same, and so one of them, the प्रतिज्ञा for instance, may be safely dispensed with. It has also been pointed out¹ that the mental operation corresponding to परामर्श and denoted by उपनय is a repetition or rather a particular application of the हेतु, and is taken as understood between the minor premise and the conclusion in Aristotle's syllogism. Either उपनय or हेतु may therefore be omitted as superfluous. There remain thus three propositions only, the हेतु or उपनय which is the *minor* premise, the उदाहरण which is the *major* one, and the निगमन or conclusion.

8. (The component parts of the two syllogisms being the same, they can be easily converted into each other. Simply by transposing the two remaining premises in the five-membered *Nyāya*, we get a perfect Aristotelian syllogism in *Barbara* of the First Figure. Take for example the hackneyed instance of a smoking mountain :—

(प्रतिज्ञा)--पर्वतो वह्निमान् ।

(हेतु)—धूमात् ।

(उदाहरण)—यो यो धूमवान् स स वह्निमान् यथा महानसः ।

(उपनय)—वह्निव्याप्यधूमवानयं पर्वतः ।

(निगमन)—तस्माद्वह्निमान् पर्वतः ।

Omitting the प्रतिज्ञा, the उपनय and the illustration यथा महानसः appended to the उदाहरण, and likewise transposing the two premises हेतु and उदाहरण, we get:—

यो यो धूमवान् स स वह्निमान् ।

धूमात् = पर्वतस्य धूमवत्त्वात्

(By dropping the useless ablative).

= पर्वतस्य धूमः or पर्वतो धूमवान् ।

तस्मात् पर्वतो वह्निमान् ।

When translated the premises will run:—

Whatever smokes is fiery ;

This mountain is a thing that smokes ;

∴ This mountain is fiery.

This is evidently a Universal Affirmative in *Barbara*, corresponding to

All B is A,

All C is B,

∴ All C is A.

Similarly an Aristotelian syllogism in *Barbara* can be converted into the Sanskrit *Nyāya* by the reverse process, namely transposition of premises and addition of प्रतिज्ञा and उपनय. Thus :—

All men are mortal,

Socrates is a man,

∴ Socrates is mortal.

Which is the same as,

Whoever has humanity has mortality,

Socrates has humanity,

∴ Socrates has mortality.

Transpose the premises and translate :—

देवदत्तो मनुष्यत्ववान् (मनुष्यः)

यो यो मनुष्यत्ववान् (मनुष्यः) स स मर्त्यत्ववान् (मर्त्यः)

तस्मात् देवदत्तो मर्त्यत्ववान् (मर्त्यः)

Add प्रतिज्ञा and उपनय and put the हेतु in the ablative form, and the syllogism becomes a full-fledged *Nyāya*—

देवदत्तो मर्त्यत्वविशिष्टः (मर्त्यः) ।

मनुष्यत्वविशिष्टत्वात् (मनुष्यत्वात्) ।

यो यो मनुष्यत्वविशिष्टः (मनुष्यः) स मर्त्यत्वविशिष्टः (मर्त्यः) यथा यज्ञदत्तः

तथा चायम् ।

तस्मात्तथा ।

We might arrive at the same result by taking only the first three members, प्रतिज्ञा, हेतु and उदाहरण, as the *Mīmāṃsikas* do, and by ignoring the rest ; only that in this case we shall

have to invert the order of all the three propositions when converting them into an English syllogism. The easiest mode of conversion however is to omit the first two propositions प्रतिज्ञा and हेतु altogether, and then take the remaining three in their order, so that the उदाहरण would be the *major* premise, उपनय the *minor*, and निगमन the conclusion of the English syllogism. In this way we shall avoid the necessity of transposing the premises, and also remove the awkwardness of changing the ablative हेतु into nominative.

9. As to the Second, Third and Fourth Figures, as well as the remaining three Moods of the first Figure, conversion can be easily effected by first reducing them to *Barbara* and then converting them in the above manner. The last three figures being always reducible to the first may be left out of consideration. Of the three remaining Moods of the First Figure the two particular Moods, *Darii* and *Ferioque* are not possible in the Sanskrit *Nyāya*, as it does not recognize a particular conclusion. The reason why particular conclusions were disregarded by the *Naiyāyikas* appears to be their uselessness. What the *Naiyāyikas* wished to gain from an inference as from all other proofs was प्रमा, right and definite knowledge, for it is this प्रमात्मकज्ञान alone that has any scientific value. A particular conclusion is obviously a vague and imperfect judgment. The very form of the five-membered syllogism points to the impossibility of having a particular conclusion. A conclusion in I or O can be had only when its subject, that is, the *minor term* or पक्ष denotes only *some* individuals of a class; but in the Sanskrit syllogism, the पक्ष must be a definite thing, that is, either an individual object like this or that mountain (as is generally the case), or at best the whole class denoted by a class-name and looked upon as one object. Otherwise there can be no पक्षधर्म and there can be no पक्षधर्मताज्ञान having a particular object like the mountain for its विषय. In cases where the साध्य is inferred on a number of things which do not however form the whole class, there is really no particular conclusion, but there are as many inferences and conclusions as there are things. The minor term being thus always universal, the conclusion

must be universal too. The case of *Celarent* (E A E) is more complex but can be explained in the same way. Although the *Naiyāyika* does not deny the possibility of a negative judgment (व्यतिरेकी अनुमिति), it seems that his conclusion (निगमन) is always affirmative in form, the change from negation to affirmation being made by the simple expedient of prefixing the negative particle (अ or अन्), or adding the word अभाव to the predicate. Thus a *Naiyāyika* will say, not शब्दो नित्यो नास्ति, but शब्दोऽनित्योऽस्ति or शब्दे नित्यत्वाभावाऽस्ति. His प्रतिज्ञा and निगमन, which are identical, must always assert something of another thing, even though that something is an अभाव; the निगमन therefore cannot be purely negative although the व्याप्ति or लिङ्ग be व्यतिरेकि. Besides purely negative knowledge cannot strictly speaking be a प्रमा, because there can be no प्रकार in निषेध and the definition तद्वति तत्प्रकारवत्त्वम् will be inapplicable. Hence *Celarent* too is not possible in Sanskrit. Whenever therefore we have a negative judgment, we have always to turn it into an affirmative one by the addition of अभाव or its synonym भेद, as is generally done in a केवलव्यतिरेकी अनुमान e. g. पृथिवीतरभेदवती, which simply translated means Earth is not anything else. It is obvious therefore that there can be only one form of syllogism in Sanskrit, namely, the Universal Affirmative (*Barbara*). Even Aristotle has shown that all kinds of syllogism can be ultimately reduced to the first two Moods of the First figure,¹ and the distinction between these two is easily removed by the above expedient. This explains why the Sanskrit *Nyāya*, though so much limited in its scope, never fails to give a valid conclusion under any circumstances.

10. The five-membered syllogism, though generally popular, is not universally accepted even in India.

Other syllogisms
accepted by Indian
systematists.

An ancient school of *Naiyāyikas* was not satisfied with the five limbs, but added five more, namely, Curiosity (जिज्ञासा), Doubt (संशय), Power of the proofs to produce knowledge (शक्यप्राप्ति), Aim (प्रयोजन) and Removal of objections (संशय-व्युदास). But they are, says *Vātsyāyana*, only aids to the

1. Grote's *Aristotle* Vol. I. p. 223.

inference, not members of the syllogism, because the definition of an अवयव (न्यायघटकत्व) does not apply to them.¹ The five-membered syllogism thus became the type for all *Naiyāyikas* and was accepted even by the *Vaiśeṣikas*. Other systematists however carried the pruning process still further. The *Mīmāṃsakas* recognized three members only, प्रतिज्ञा, हेतु and उदाहरण, while another school recognized हेतु, उदाहरण and उपनय. The *Vedāntins* also insist on having three members only, but they are not particular as to whether the first three or the last three should be taken. Thus *Vedānta-Paribhāṣā* remarks — अवयवाश्च त्रय एव प्रतिज्ञाहेतुदाहरण-रूपा उदाहरणोपनयानिगमनरूपा वा न तु पञ्च । अवयवत्रयेणैव व्याप्तिपक्षधर्मयोरुपदर्शनसंभवेनाधिकावयवद्वयस्य व्यर्थत्वात्.² The *Bauddhas* recognize only two, उदाहरण and उपनय. The author of *Nyāya-Bindu* who was a Buddhist likewise mentions two only, प्रतिज्ञा and हेतु, making the दृष्टान्त or व्याप्ति a part of the हेतु. Thus it will be seen that the weight of opinion outside the *Nyāya* and *Vaiśeṣika* schools inclines towards the acceptance of a three-membered syllogism, which is practically identical with that of Aristotle.

11. Although there is so much difference of opinion as to the number of the members of a *Nyāya*,
Other names. there is a general agreement about the form and the import of the several members; only that the *Vaiśeṣikas* have a second set of significant names for the five members, viz., प्रतिज्ञा (Promise), अपदेश (sign), निदर्शन (Illustration), अनुसंधान (Scrutiny) and प्रत्याम्नाय (Repetition).³ Which of these two sets of the names is the older one is not known at present.

12. The case of one of the five members, viz., उदाहरण or व्याप्ति, is somewhat peculiar, and requires further examination, as it is likely to throw much light on the history of the five-membered syllogism. It must have been noticed that while the names of other members are

1. *Vāt.* on G. S. I, I. 32.

2. *Vedānta Paribhāṣā* Calc. ed, p. 14.

3. *V. S. Up.* Calc. ed. p. 397.

significant, there is apparently no reason why the proposition stating the व्याप्ति should be called उदाहरण or दृष्टान्त, except the accident of its containing, as a sort of an appendage, the illustration यथा महानसः. It is the first part of the उदाहरण containing व्याप्ति that is really essential to the syllogism, while the illustration is not only unnecessary, but is often omitted. It is certainly anomalous that the most important premise in the syllogism, on which in fact the inference chiefly rests, should be reduced to the position of a mere दृष्टान्त, and thus be deprived of its essential character, viz., universality. How are we to account for this anomaly? Nay, the presence of the illustration in the उदाहरण has been actually made the ground of censure against the Indian syllogism by some superficial critics; while even those who have defended it offer rather an apology than a well-grounded explanation of its existence. Ritter¹ for instance says that two of the five members of Kaṇāda's argument "are manifestly superfluous, while by the introduction of an example in the third the universality of the conclusion is vitiated." The conclusion is vitiated because the addition of the example puts some sort of limitation on the general proposition, and thus takes away its universality. The most that Ballantyne could say to justify the example was that it is "a matter of rhetorical convenience, designed to bring to the recollection of the hearer examples, in regard to which all parties are unanimous, and which are such as should constrain him to admit the universality of the principle from which the conclusion follows."² But this explanation is not at all satisfactory. The universal proposition, if true and unanimously accepted, does not get any additional weight by a stray example, while if it is false or unfounded, the citation of a single example only serves to mislead the hearer, and is therefore quite out of place in a valid syllogism. The example, say the critics, is either superfluous or mischievous, and ought therefore to be discarded altogether. It was so discarded by the Vaiśeṣikas who limited the proposition to the mere statement of the व्याप्ति, but the general practice of the Naiyāyikas has still retained it.

1. Ritter: *History of Philosophy* Vol. IV. p. 365.

2. Ballantyne: *Lectures on Nyāya Philosophy*, p. 36.

13. Max Müller starts another theory to explain away the difficulty. "But if we inquire more carefully," says he, "we find that the instance in *Gotama's* syllogism has its own distinct office, not to strengthen or to limit the universal proposition, but to indicate, if I may say so, its modality. Every *Vyāpti* must of course admit at least one instance. These instances may be either positive only, or negative only, or both positive and negative." This means that the instance is intended to show whether the व्याप्ति is अन्वयि or व्यतिरेकि. The theory is no doubt plausible, and seems to have been suggested by the two kinds of instances, सपक्षदृष्टान्त and विपक्षदृष्टान्त, recognized by the *Naiyāyikas*; but it neither solves the real difficulty, nor is it absolutely correct. As a matter of fact the अन्वय and व्यतिरेक are indicated, so far as they can be so indicated, in the व्याप्ति itself, and not the दृष्टान्त; while the latter takes its own character from the व्याप्ति. It is the व्याप्ति which makes a दृष्टान्त either अन्वयि or व्यतिरेकि, and not *vice versa*. Take for instance the proposition यत्र वह्निर्नास्ति तत्र धूमोऽपि नास्ति यथा महाद्गदे, that is to say, यत्र बन्धभावस्तत्र धूमाभावः यथा महाद्गदे. This is a व्यतिरेकव्याप्ति, if वह्नि is the साध्य and धूम the साधन, and महाद्गद will be a विपक्षदृष्टान्त. But suppose the साध्य to be धूमाभाव and the साधन to be बन्धभाव, that is, we infer not fire from smoke but absence of smoke from the absence of fire; then the same व्याप्ति will be an अन्वयव्याप्ति and the दृष्टान्त will be a सपक्षदृष्टान्त. So it is really the साध्य and साधन that first determine the modality of the व्याप्ति, and then of the दृष्टान्त. The दृष्टान्त will therefore be practically useless for determining the modality of the universal proposition, for when we know what sort of दृष्टान्त it is, the modality is already determined. Of course the दृष्टान्त may often assist us in understanding the scope of the व्याप्ति; but the question before us is not whether it may be occasionally useful where it is put, but whether it is absolutely necessary. Besides, the theory, even supposing it to be correct, does not explain the anomaly how the universal proposition came to be called a mere उदाहरण or दृष्टान्त. In one sense, however, Max Müller is right, probably without being aware of it. We shall presently see how.

1 Thomson's *Laws of Thought*, Appendix p. 296.

14. The real explanation, if a conjecture may be hazarded, is rather historical than logical. It is not that the instance was tacked to the universal proposition for the purpose of satisfying some logical necessity; but it appears more probable that the instance was the original part, and the generalization itself is a later addition. There seems to have been at first only the instance and nothing else in the third member when the five members received their designations, and that the portion stating the व्याप्ति was added afterwards when its necessity came to be perceived. We can clearly discover traces of the process by which this enlargement of the third member was brought about, if we examine the various references to it in different works on *Nyāya*. Modern writers like *Annambhatta* define उदाहर as व्याप्तिप्रतिपादकं वाक्यम्, but there is no trace of this व्याप्तिप्रतिपादकत्व in *Gotama's* definition, साध्यसाधर्म्यात् तद्धर्मभावो दृष्टान्त उदाहरणम्,¹ which means that 'the उदाहरण is an instance which possesses an essential property of the साध्य by similarity.' This definition obviously applies to the महानस alone which possesses the साध्यधर्म वह्निमत्त्व, and not to the व्याप्तिवाक्य. At the time of *Gotama's Sūtras*, therefore, the five-membered syllogism seems to have run thus : पर्वतो वह्निमान् । धूमवत्त्वात् । यथा महानसः । तथा चायम् । तस्मात्तथा । This primitive form of the syllogism at once explains two things. First it accounts for the third member being called उदाहरण or दृष्टान्त, because there is obviously nothing but the instance in it. Secondly, it explains why the उपनय which follows उदाहरण began with तथा, which seems to have been first used as a correlative of यथा in the उदाहरण. The उदाहरण and the उपनय appear in fact to have formed one complex sentence, यथा महानसस्तथायं पर्वतः (As was the kitchen so is this mountain smoking), of which the उदाहरण beginning with यथा formed the relative half, and the उपनय beginning with तथा was the principal part. On some such supposition alone can we understand why *Gotama* defines उपनय as उदाहरणापेक्षस्तथेत्युपसंहारः.² उदाहरणापेक्ष, says *Vātsyāyana*, means उदाहरणवशा, 'depending on the उदाहरण, 'depending of course in the sense that the co-

1 G. S. I, 1, 36.

2 G. S. I, 1, 38.

relative sentence तथायं पर्वतः can be properly understood only from its relative antecedent यथा महानसः. But this does not convey the full idea of उपनय ; so it is further called an उपसंहार, 'a summing up' as it were, i. e. an application of the sense conveyed in the उदाहरण to the present case of the mountain, which application is of course implied by the word तथा. *Gotama's* definition of उपनय is however quite unintelligible if applied to the syllogism as it stands at present, for the उदाहरण which begins with व्याप्ति cannot be the relative antecedent of the उपनय, and so there is no word of which तथा might be a correlative.

15. The above hypothesis as to the original form of the syllogism is not conjectural only ; for the skeleton syllogism mentioned above is actually found in all the ancient works on *Nyāya*, which rarely mention the व्याप्ति. *Dharmakīrti*, for instance, the author of *Nyāya-Bindu*, gives, as an illustration of a faulty दृष्टान्त, the syllogism, अनित्यः शब्दः कृतकत्वात् । आकाशवत्¹ ; while in another place of the same work he quotes the stock instance thus, यत्र धूमस्तत्र वह्निः । यथा महानसादौ । अस्ति चेह धूम इति । (p. 109). This was therefore the original five-membered syllogism, but it was soon found to be imperfect. There was nothing in it to determine the साध्यनियतत्वं of हेतु, that is, to show the *invariable concomitance* of the साध्य with the हेतु. At first the दृष्टान्त itself was made to convey this sense, but it was obviously inadequate to serve the purpose, and a door was opened to many fallacies arising from imperfect generalizations. To guard against this danger the universal proposition यत्र यत्र धूमः etc. was inserted. If a guess can be hazarded, the व्याप्तिवाक्य was possibly at first inserted in the हेतुवाक्य as a विशेषण of साध्यव्याप्य हेतु, as is shown in the above quotation from *Nyāya-Bindu*, and later it was transposed to उदाहरण. Being thus originally a subordinate adjunct of हेतु, it became later on an independent and the chief premise. Before the व्याप्तिवाक्य had come into the syllogism, the अन्वय and व्यतिरेक of the हेतु were determined by the दृष्टान्त, according as it had similarity (साधर्म्य) or dissimilarity (वैधर्म्य) with the साध्य ; but it was rendered practically useless after the व्याप्तिवाक्य had settled down as a necessary part of the syllo-

¹ *Nyāya-Bindu-Tīkā*, Bibl. Ind. p. 118.

gism. Max Müller's theory about the instance being indicative of the *modality* may therefore have been true when the दृष्टान्त was the sole member of the उदाहरणवाक्य. The commentator of *Nyāya-Bindu* declares in fact the same thing when he says, तस्माद्दृष्टान्तव्यतिरेकेण हेतोरन्वयो व्यतिरेको वा न शक्यो दर्शयितुम्,¹ 'the अन्वय or व्यतिरेक of the हेतु cannot be indicated except by the दृष्टान्त.' After the व्याप्ति had become the chief and necessary part of the उदाहरण, this function of the दृष्टान्त was naturally shifted to it, and the दृष्टान्त gradually sunk to the level of a useless appendage. The conservative *Naiyāyikas* have persisted in retaining it, but a modern writer *Laugākṣi Bhāskara* in his *Nyāya-Siddhānta-Manjari-Prakāśa*, has the courage to declare दृष्टान्तप्रयोगस्तु सामयिको न नियतः, 'the employment of the instance is purely conventional and not necessary.' In this way the दृष्टान्त, which was at first the gist of the उदाहरण, came to be positively ignored.

16. A singular analogy to the *Naiyāyika* उदाहरण is to be found in the Argument from Example, noticed by Aristotle, and apparently very common before him in Greece. Aristotle gives as an illustration:--

The War of Athens against Thebes (पक्ष) was mischievous (साध्य);

Because it was a war against neighbours (हेतु);

Just as the war of Thebes against Phokis was (दृष्टान्त).²

Both the ancient Sanskrit syllogism and the Greek Argument by Example appear to be cases of an inference from particulars to particulars which, according to J. S. Mill, was the original and true type of an inference.³

1 *Nyāya-Bindu-Tikā*. Bibl. Ind. p. 90.

2 Grote *Aristotle* Vol. I. p. 274.

3 Mill : *System of Logic*, People's Ed. p. 126.

SECT. XLVII. परामर्शः.

Consideration of the sign is alone the cause of both Judgment for One's Own sake and that for Another's. Hence Consideration is the Inference.

1. परामर्श has already been explained,¹ and it has also been shown why it is called लिङ्गपरामर्श or तृतीयलिङ्गपरामर्श.² *Annambhatta* purposely uses the word लिङ्गपरामर्श, instead of simple परामर्श, in order to emphasize his view that the real करण of अनुमिति is the लिङ्गपरामर्श and not लिङ्ग merely, as some say, and that the name अनुमान is properly applicable to the लिङ्गपरामर्श alone. In T. D. he briefly notices the three views that have prevailed about the real proximate cause of अनुमिति. The अनुमितिकरण according to these three schools of opinion, is either लिङ्गज्ञान, व्याप्तिज्ञान or परामर्श. The first is the view of the *Vaiśeṣikas*, who accordingly name अनुमिति as लैङ्गिकज्ञान. *Śaṅkara Miśra* the author of *Upaskāra* sums up this view in the following couplet :--

अनुमेयेन संबद्धं प्रसिद्धं च तदन्विते ।

तदभावे तु नास्त्येव तल्लिङ्गमनुमापकम् ॥³

'लिङ्ग is the अनुमितिकरण, because it is connected with साध्य (अनुमेय) on the पक्ष, is known to exist wherever साध्य exists, and is never found where साध्य is absent.' *Śaṅkara Miśra* argues that परामर्श, having no व्यापार after it, cannot be the करण which is always व्यापारवत्, while if लिङ्ग be the करण, परामर्श itself becomes its व्यापार.) This view is summarily rejected by *Annambhatta* on the ground that it leads to the absurdity that even a past or a future लिङ्ग, that is, smoke which was once observed but does not now exist on the mountain or smoke which is not yet seen on the mountain, would produce the अनुमिति of the present existence of fire. If smoke alone is the करण of अनुमिति there is no reason why the smoke of yesterday or the smoke of to-morrow should not produce an inference of a fire existing on the mountain to-

1 Vide Note 3 on Sec. 44, p. 234, *Supra*.

2 See Note 3 on Sec. 45, p. 255, *Supra*.

3 V. S. Up. Calc. ed. p. 392.

day. Hence the necessity of the condition that लिङ्ग, in order to be effective for अनुमान, must be first observed as a पक्षधर्म, that is, as a property of the mountain actually existing at the time of the inference. In other words it is the पक्षधर्मताज्ञान, otherwise called परामर्श, and not लिङ्गज्ञान merely, that is the real करण of अनुमिति.

2. But one might ask why create a new करण of अनुमिति in the form of the composite परामर्श which is a mixture of व्याप्तिज्ञान and पक्षधर्मताज्ञान, when you can as well look upon the last two themselves as severally the करण of अनुमिति. To this *Annambhatta* replies that it is simpler to hold the complex परामर्श as the one करण of अनुमिति than to recognize two separate करण in the shape of व्याप्तिस्मृति and पक्षधर्मताज्ञान. Besides we might have even agreed to this latter alternative if the परामर्श could have been altogether dispensed with ; but that is not possible, because परामर्श is necessary to account for the cognition which is conveyed by the उपनय in a परार्थानुमान, and which thereupon produces the अनुमिति in the hearer's mind. If then परामर्श must be recognized as the करण of a परार्थानुमिति, why have a separate करण for the स्वार्थानुमिति, when the same can do for both ? This reasoning is faultless, except that according to those who define करण as व्यापारवद-साधारणं कारणं, परामर्श cannot be the करण as it has no व्यापार coming after it. Hence the advocates of this definition of करण, namely, the ancient *Naiyāyikas*, propose व्याप्तिज्ञान to be the करण and परामर्श to be its व्यापार, while the moderns who deny the necessity of व्यापारवत्त्व and define करण as फल-योगव्यवाच्छिन्नं कारणं regard परामर्श itself as the करण. *Annambhatta* seems really to be vacillating between these two views, although in the text he has made the emphatic declaration लिङ्गपरामर्श एव करणम्, and his vacillation is due to his non-preference for either of the two definitions of [करण. At least there is a glaring inconsistency between this passage and the concluding remarks of Sect. 43 where he declares इन्द्रिय to be the करण of प्रत्यक्ष.¹ Had it not been for those remarks, it could have been said with much plausibility that, notwithstanding his obvious indecision as to the real definition of a करण, *Annambhatta* adopted the modern in

1 See p. 32 ; and Note 3 thereon p. 224. *Supra*.

preference to the ancient view. Probably he did so, and the statement about the करण of प्रत्यक्ष was made simply in deference to the popular convention which from time immemorial has regarded इन्द्रिय to be the करण of प्रत्यक्ष and has thereby made the very word करण synonymous with इन्द्रिय. The book being intended for beginners, the author appears to have avoided all fruitless controversies as much as possible, and hence sometimes fell into inconsistencies.

3. The reading कारणम् in the first part of this section is obviously wrong, although it is found in all Mss. except two. It is probably an emendation of some later copyist, who having noticed the inconsistency of this passage with Sect. 41 thought of removing it by improving the text.

SECT. XLVIII. लिङ्गम्.

Mark or Sign is of three kinds : 1 positive and negative, 2 purely positive, and 3 purely negative. That which pervades both positively and negatively is positive-negative, as for instance, smokiness when fire is to be proved. "Where there is smoke, there is fire as in a kitchen" is positive concomitance. "Where there is no fire there is no smoke as in a lake" is negative concomitance. Purely positive is that where there is positive concomitance only, e. g. pot is namable because it is knowable like cloth. Here there is no negative concomitance of namability or knowability as all things are knowable and namable. Purely negative is that which has a negative concomitance only, e. g. earth differs from other things because it has smell; that which does not so differ has no smell, as water; this is not like it; and hence it is not so. Here there is no positive instance (of a thing) that has smell (and yet) differs from others, because the whole earth forms the subject.

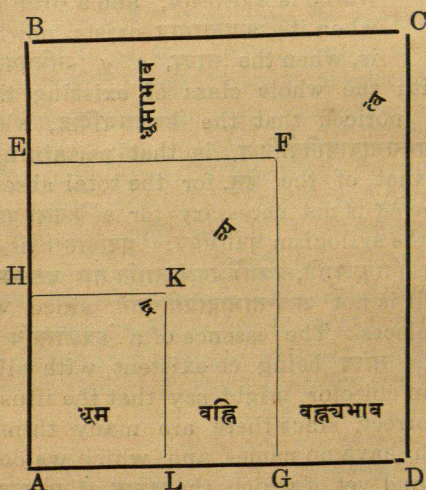
1. Having described the typical syllogism, the author now proceeds to treat of the mark or 'middle term,' which determines the character of the syllogism and also makes the inference valid or invalid. A mark may be true or false,

The reason or
'mark.'

and accordingly a हेतु is either सद्हेतु or असद्हेतु, the latter being usually termed हेत्वाभास. Before adverting to this distinction, it is necessary to tell what a *mark* in general means and how it usually stands in a syllogism. The author therefore first describes the three kinds of लिङ्ग. "The *mark* is of three sorts, *positive and negative*, merely *positive*, and merely *negative*. Of these the first is in invariable concomitance with the साध्य both *affirmatively* and *negatively*, as *smokiness* is with fire. The second has the invariable concomitance *affirmatively* only; and the third *negatively* only. An instance of the second is 'A jar is namable, for it is knowable,' because both the साध्य 'namability' and the साधन 'knowability' being here co-extensive, a negative concomitance of theirs, that is, a concomitance of their absolute negations is impossible. The properties of namability and knowability reside in all things, and so there is no विपक्षदृष्टान्त on which the अभाव of साध्य exists, and hence there is no व्यतिरेकव्याप्ति. The example of the third kind is 'Earth is distinct from all other *padārthas*, because it has odour.' In this case there is a विपक्षदृष्टान्त where there is neither odour nor इतरभेद as in water or air, but there is no सपक्षदृष्टान्त where both गन्ध and इतरभेद are concomitant. In the second case therefore we can have only an अन्वयव्याप्ति, such as यत्र यत्र प्रमेयत्वं तत्राभिधेयत्वं यथा घटे, but no व्यतिरेकव्याप्ति, such as यत्राभिधेयत्वं नास्ति तत्र प्रमेयत्वमपि नास्ति, owing to the impossibility of finding a corresponding दृष्टान्त. In the third case we have a व्यतिरेकव्याप्ति, यत्र इतरभेदो नास्ति तत्र गन्धवत्त्वमपि नास्ति, because we have no less than 14 odourless things (the 8 *dravyas* besides earth, plus the remaining 6 *padārthas*), on which the इतरभेद (difference of earth from all other things) does not exist; but obviously we cannot have any अन्वयव्याप्ति in this case, as neither गन्ध nor पृथिवीतरभेद, which is the same as पृथिवीत्व, exist anywhere but on पृथिवी. In the first case however we have both kinds of व्याप्ति, because we can have both similar and contrary instances. We can say यत्र यत्र धूमस्तत्र वह्निः यथा महानसे, as well as यत्र वह्निर्नास्ति तत्र धूमोऽपि नास्ति यथा जलद्वे. The chief test therefore of discovering to which of these three kinds a *mark* belongs is to see whether there is any सपक्षदृष्टान्त, that is, an instance in which the साध्य co-exists with the हेतु, and also a विपक्षदृष्टान्त or a contrary instance in which साध्याभाव co-exists with हेत्वभाव. If both

kinds of instances are available, then the हेतु as well as the inference in which it is employed are *अन्वयव्यतिरेकि*; secondly if the first kind of instance alone is found and not the second, they are *केवलान्वयि*; and lastly if the second only is found but not the first, they are *केवलव्यतिरेकि*.

2. *अन्वय* is defined by T. D. as the invariable concomitance of हेतु and साध्य while *व्यतिरेक*, literally meaning *अभाव*, is a similar concomitance of their absolute negations. The व्याप्य and व्यापक interchange places in the व्यतिरेकव्याप्ति, that is, the अभाव of वह्नि which is the व्यापक in the अन्वयव्याप्ति becomes व्याप्य of the अभाव of धूम the original व्याप्य. This can be best illustrated by three squares drawn with two sides of each coinciding thus :--



Let the largest square A C represent any class larger than वह्नि such as द्रव्य, the intermediate figure A F represent the sphere of वह्नि, and the smallest A K represent that of धूम. Now it is clear that the whole space of धूम is covered by that of वह्नि, and so we can say यत्र धूमस्तत्र वह्नि. The square A K will therefore comprise all similar instances such as महानस, यज्ञशाला etc. The gnomon E K G will comprise all instances such as तत्रायःपिण्ड where there is fire but no

smoke. In a contrary inference from वह्नि to धूम, the gnomon E K G will correspond to an उपाधि (आर्देन्धनसंयोग) which vitiates a व्याप्ति like यत्र यत्र वह्निस्तत्र धूमः. The gnomon B F D comprises instances where धूमाभाव is co-existent with वह्न्यभाव. This is the region of विपक्षदृष्टान्त which will justify the व्याप्ति, यत्र वह्न्यभावस्तत्र धूमाभावः. The figures also show that the square of वह्नि being larger than that of धूम, वह्नि is व्यापक of धूम. Similarly, the Gnomon B K D representing धूमाभाव is larger than the gnomon B F D which represents वह्न्यभाव, and hence धूमाभाव is व्यापक of वह्न्यभाव, the intermediate gnomon E K G again representing the उपाधि if the व्याप्ति is reversed. The proper व्यतिरेकव्याप्ति therefore runs यत्र यत्र वह्न्यभावस्तत्र धूमाभावः, यथा जलह्रदे.

3. T. D. defines a केवलान्वयि लिङ्ग as 'that the साध्य of which is केवलान्वयि;' and a साध्य is केवलान्वयि when its अत्यन्ताभाव exists nowhere, that is, when the साध्य, *e. g.* अभिधेयत्व, is co-terminous with the whole class of existing things. It should also be noticed that the केवलान्वयित्व, which T. D. defines as अत्यन्ताभावाप्रतियोगित्व, is that pertaining to the साध्य, and not that of the हेतु, for the total absence of an अत्यन्ताभाव of the हेतु is not necessary for a केवलान्वयि अनुमान. For instance, the syllogism घटोभिधेयः। घटत्वात्। is केवलान्वयि, as there is no व्यतिरेकव्याप्ति, यत्राभिधेयत्वं नास्ति तत्र घटत्वमपि नास्ति; but the हेतु in it is not अत्यन्ताभावाप्रतियोगि, since घटाभाव exists in many places. The essence of a केवलान्वयि therefore consists in the साध्य being co-existent with all existent things. But an objector might say that the illustration in the text is incorrect, since there are many things in the universe which have no names, and which we do not and cannot know, and yet of which the अभाव of प्रमेयत्व or अभिधेयत्व can be predicated. But, says T. D., the अभिधेयत्व and प्रमेयत्व referred to are not those determined by our own limited capacity; they are absolute, and so though a thing may be unknown and unnamed to us, it is still the object of the omniscience of God.

4. The case of केवलव्यतिरेकि is rather complicated. Its essence consists in the साध्य being co-terminous with पक्ष, as in the example, पृथिवी इतरभेदवती। गन्धवत्त्वात्. Here we can-

Kevalānvayi.

Kevala-vyatireki.

not have an अन्वयव्याप्ति, यत्र यत्र गन्धवत्त्वं तत्र पृथिवीतरभेदः, because everything that has गन्धवत्त्वं as well as पृथिवीतरभेदः, i. e. पृथिवीत्वं, being included in पृथिवी itself, there is no दृष्टान्त apart from the पक्ष. There are plenty of instances, however, on which the साध्याभाव, i. e. पृथिवीतरभेदाभाव or पृथिवीतरत्व, is found coexistent with गन्धाभाव. Any of the eight substances other than पृथिवी or any of the remaining six categories will serve for such a विपक्षदृष्टान्त.

5. Here T. D. indulges in a little argument which is typical of the scholastic subtleties for which *Naiyāyikas* have become so famous. An objector starts up saying that इतरभेद cannot be proved by inference on पृथिवी, and he puts down a dilemma. The साध्य i. e. इतरभेद is either previously known or not; if it is known to exist somewhere (elsewhere than earth of course), then the हेतु (गन्ध) either co-exists with it or not. Now if the हेतु co-exists with the साध्य in the other thing, then that is clearly a सपक्षदृष्टान्त and there is an अन्वयव्याप्ति; but if the हेतु co-exists with it in no other thing than earth, then it is a peculiar characteristic of the पक्ष, and there can be no व्याप्ति and no inference based on it. On the other hand, if the साध्य itself is unknown, then of course there can be no अनुमिति; and for this reason: an अनुमिति, such as पर्वतो वह्निमान्, is a विशिष्टज्ञान, that is, knowledge of a mountain, not pure and simple, but as वह्नि-विशिष्ट 'characterized by fire.' But there is a maxim that a विशिष्ट thing cannot be known without the previous knowledge of the विशेषण; for how can we know a दण्डिन् unless we first know what a दण्ड is. The knowledge of वह्निमत्पर्वत cannot therefore be had without our first having the knowledge of the वह्नि. But by our hypothesis the साध्य i. e. इतरभेद, is unknown; and hence there can be no अनुमिति like इतरभेदवती पृथिवी. Similarly as the knowledge of an अभाव depends on the knowledge of its प्रतियोगी, the इतरभेदाभाव is also unknown, and hence there can be no व्यतिरेकव्याप्ति, यत्र इतरभेदाभावस्तत्र गन्धवत्त्वम्. A केवलव्यतिरेकि syllogism is therefore an impossibility.

6. The above dilemma is fairly nettling, although our author does attempt to give some sort of a reply to it in the concluding portion of the commentary. The passage is involved

A passage in
Tarka-Dīpikā ex-
plained.

in considerable obscurity. As read by all copies except one or rather two, it is quite unintelligible, and is probably corrupt ; and I have therefore ventured to correct it, on the high authority of *Nilakaṇṭha* and the Ms. J, by transferring the words नान्वायित्वासाधारण्ये to the preceding sentence, and splitting प्रत्येकाधिरणप्रसिद्ध्या into प्रत्येकाधिकरणे प्रसिद्ध्या. Read thus, the gist of the reply is briefly this. The साध्य in the inference in question is not the cumulative difference of fourteen *padārthas* (8 substances + 6 categories) from earth which being unobserved on anything other than earth may be unfit to be a साध्य. What is really intended to be proved on earth is the simultaneous existence of the *thirteen mutual negations* of those fourteen *padārthas*. *Mutual negation* exists between two things, and so there are thirteen *mutual negations*, corresponding to the thirteen couples that can be formed out of fourteen *padārthas*, water etc., and residing in thirteen things, excluding that of which the *negation* is spoken of. Thus जलमे resides in the thirteen things, light etc. ; and तेजोभेद resides in all things excepting light. Thus the thirteen *mutual negations* reside in thirteen things at a time, but on none of the fourteen things do all of them exist at *one and the same time*. They do however so exist on earth, and in this respect earth is distinguished from the fourteen things. Our साध्य therefore here is त्रयोदशत्वावच्छिन्नभेदस्यैकाधिकरणवृत्तित्वम्, ' the simultaneous existence of the thirteen mutual negations on one thing. ' And as no instance is known on which the existence of this साध्य is previously ascertained, we cannot know whether the हेतु exists there or not ; and having thus no knowledge of the हेतु positive or negative, we can neither call it अन्वायि, nor असाधारण. Thus the first horn of the objector's dilemma is disposed of. The second, that the साध्य being unknown there can be no अनुमिति, is also weak, because we have seen that the साध्य which we have taken, namely जलादिभेदकूट, ' aggregate of the thirteen mutual negations of water etc. ', is already known by the previous ascertainment of its thirteen components, the thirteen *mutual negations* severally. But, the objector rejoins, though your thirteen *negations* may be severally known, their aggregate is still unascertained ; how can then the साध्य be called प्रसिद्ध ? Well, replies the undaunted *Naiyāyika*, I do not recognize

an aggregate (समुदाय) as a separate thing from its components, and my साध्य here is not a fictitious thing like समुदाय, but the several *negations* themselves, which, being ascertained on their respective substrata (प्रत्येकाधिकरणे प्रासिद्ध्या), may be inferred conjointly on earth. Consequently there ought to be no difficulty in obtaining a साध्यविशिष्टानुमिति as well as a व्यतिरेकव्याप्ति. The केवलव्यतिरेकि inference is therefore quite possible and valid.

7. We have followed the tedious argument in T. D. simply to show into what absurdities the *Naiyāyikas* have fallen by recognizing a केवलव्यतिरेकि अनुमान. The essence of it, as is pointed out above, is that the साध्य is co-terminous with पक्ष. The साध्य cannot therefore be anything but a peculiar characteristic of पक्ष. Now how can the peculiarity of a thing be known except by actual observation? The syllogism is quite incapable of discovering it. The conclusion in an inference is a particular deduction from the general proposition, and, being already contained in it, is not a new piece of knowledge. But an असाधारणधर्म is *ex hypothesi* a new fact, and capable of being known only by observation or by induction. This is the gist of the dilemma stated above while the answer given by T. D. is most unsatisfactory.

8. Why then did the *Naiyāyikas* at all recognize व्यतिरेकि अनुमान which involved them in so much absurdity. Two reasons might be suggested for this; one is historical while the other is purely dialectical. The three-fold division of लिङ्ग and अनुमान is comparatively modern, but it is derived from *Gotama's* division of हेतु into साधर्म्येण and वैधर्म्येण.¹ The two kinds of हेतु made the उदाहरण, उपनय and निगमन also two-fold; and thus the whole syllogism changed its character according as the हेतु was through similarity or dissimilarity. The साधर्म्य or वैधर्म्य referred to was that of दृष्टान्त, and thus the दृष्टान्त was as it were the key to the whole syllogism. When the दृष्टान्त was enlarged by the addition of the व्याप्तिवाक्य, and thereby itself sank into insignificance, the व्याप्ति became the means of determining the character of the हेतु and the अनुमान as regards their साधर्म्य and वैधर्म्य, or, to use their

modern equivalents, अन्वयित्व and व्यतिरेकित्व. So long as the distinction was confined to व्याप्ति, there was nothing absurd or unintelligible about the doctrine; but the modern school of *Naiyāyikas* in their zeal to carry each and every doctrine of the ancients to its ultimate result, discovered three ways in which the two kinds of व्याप्ति might be used in a syllogism, namely, either each alone by itself, or both optionally. In this way the *mark* (लिङ्ग) became three-fold, according as it was followed by a व्याप्ति that was purely अन्वयि, or purely व्यतिरेकि, or both alternatively. Hence modern writers like *Annambhatta* define a लिङ्ग as one having an अन्वयव्याप्ति or व्यतिरेकव्याप्ति or both. As most inferences have both kinds of व्याप्ति, the class of अन्वयव्यतिरेकि लिङ्ग is the largest and also the most general one, while the other two are exceptional cases which are classed apart because they cannot be included in the general category.

9. In one sense both the केवलान्वयि and केवलव्यतिरेकि may be

Objections.

said to be defective syllogisms, as lacking one or more characteristics that are requisite for a sound deduction. Properly speaking, a deduction ought to be the inference of a particular or a less general proposition from a wider one; but in a केवलान्वयि the साध्यविशिष्टानुमिति is not only no particular case included in the व्याप्ति, but the साध्य is actually co-terminous with the widest generality, namely, Existence (सत्ता). Similarly in a केवलव्यतिरेकि, the साध्य being co-terminous with the पक्ष, there is no middle term between the two, or, if there happens to be one, it is co-extensive, with पक्ष and साध्य (as in the example given in the text). The three terms being co-extensive, all the premises become equally wide and practically tautologous. The *Naiyāyikas* themselves seem to have been half conscious of the precarious case of the केवलव्यतिरेकि, for the reply they give to a strong objection, sometimes advanced against it, is anything but convincing. The objection is directed against व्यतिरेकव्याप्ति itself. अनुमिति is the result of परामर्श, and परामर्श is व्याप्तिविशिष्टपक्षधर्मताज्ञान, that is साध्यव्याप्यलिङ्गज्ञान which can arise only when the साध्यव्याप्यत्व is known to reside in लिङ्ग. Now in a व्यतिरेकव्याप्ति, the साध्याभाव is the व्याप्य of हेत्वभाव, and hence the व्याप्यत्व or व्याप्ति resides in साध्याभाव. But how can a व्याप्ति, residing in one

thing, namely साध्याभाव, be the विशेषण of a quite different thing, namely साधन or लिङ्ग, and thus produce the व्याप्तिविशिष्ट-पक्षधर्मताज्ञान ? The *Naiyāyikas* try to meet this difficulty by making व्याप्तिविशिष्टत्व a property not of पक्षधर्म but of पक्षधर्मताज्ञान.¹ The force of the objection is not however thereby much lessened. The difficulty in short is, how can we infer fire from smoke from the invariable concomitance of their negations ? Or to make it still more clear, if a व्यतिरेकानुमान be put in the English *Celarent* (E A E), of which the major premise, i. e. व्यतिरेकव्याप्ति is negative, the conclusion also must be negative, while in the Sanskrit *Nyāya*, we derive a positive conclusion (प्रवर्तते वह्निमात्र) from a negative major premise. This is absurd. The reply of the *Naiyāyikas* is that though the व्याप्ति may reside in साध्याभाव the साधन is still known as the प्रतियोगि of its अभाव which is व्यापक ; and that sort of knowledge of the साधन being an accessory suffices to produce the requisite परामर्श. Hence S. C. says साध्याभावव्यापकी-धृताभावप्रतियोगित्वेन साधनस्य पक्षवृत्तित्वज्ञानं सहकारि. But this is a lame explanation after all.

10. The true reason for recognizing a व्यतिरेकि अनुमान seems to have been to avoid the necessity of having a fifth proof called अर्थापत्ति (Presumption).

The use of Kevala
vyatiireki.

The instances which the *Mīmāṃsakas* give

of अर्थापत्ति are all included by *Naiyāyikas* in their केवलव्यतिरेकि अनुमान. The analogous reasoning from तर्क or *Reductio ad absurdum* would also come under the same head, and in fact all conclusions that cannot be proved directly (e. g. जीवत शरीरं सान्मकं प्राणादिमत्त्वात्) will be proved by the *Naiyāyikas* by केवलव्यतिरेकि. Those of course who, like the *Mīmāṃsakas* and the *Vedāntins*, accept अर्थापत्ति as proof, dispense with not only the केवलान्वयि and केवलव्यतिरेकि but the whole व्यतिरेकि अनुमान altogether. The strictures passed by the *Vedānta-Paribhāṣā* upon the *Nyāya* doctrine of व्यतिरेकि inference are instructive and deserve to be quoted in full:--
तच्चानुमानमन्वयिरूपमेकमेव न तु केवलान्वयि सर्वस्यापि धर्मस्यास्मन्मते
(अद्वैतमते) ब्रह्मनिष्ठात्यन्ताभावप्रतियोगित्वेनात्यन्ताभावाप्रतियोगिसाध्य-
कत्वरूपकेवलान्वयित्वस्यासिद्धेः । नाप्यनुमानस्य व्यतिरेकिरूपत्वं साध्याभावे
साधनाभावनिरूपितव्याप्तिज्ञानस्य साधनेन साध्यानुमितावनुपयोगात् । कथं

तर्हि धूमादावन्वयव्याप्तिमविदुषोऽपि व्यतिरेकव्याप्तिज्ञानादनुमितिः । अथा-
पत्तिप्रमाणादिति वक्ष्यामः ॥¹

SECTIONS. II, L, LI. पक्षः सपक्षो विपक्षश्च.

A subject is one where the thing to be proved is doubted as mountain when smokiness is the reason.

A similar instance is one where the thing to be proved is ascertained, as kitchen in the same case.

A contrary instance is that where the absence of the thing to be proved is ascertained, as a lake in the same case.

1. In these three short sections, *Annambhaṭṭa* defines three terms which constantly occur in connection with the syllogism. "*Pakṣa, Sapakṣa and Vipakṣa.*" A पक्ष, place or subject, is that on which the existence of the thing to be ascertained is doubtful, as the mountain in an inference of fire from smoke. A सपक्ष or similar instance is that on which the existence of the thing to be ascertained is already known, as the culinary hearth in the same inference. A विपक्ष or contrary instance is that on which the negation of the thing to be ascertained is definitely known, as a great lake in the same inference. "*Annambhaṭṭa* has given the simplest definitions of the terms, probably copied by him from *Gaṅgeśa's Tattva-Cintāmaṇi*, while most of the others such as that of N. B. are merely variations of it. The सपक्ष and विपक्ष of the later *Naiyāyikas* of course correspond respectively to the instances by similarity and dissimilarity mentioned by *Gotama*, and are employed to illustrate अन्वयव्याप्ति and व्यतिरेकव्याप्ति respectively.

2. The definition of पक्ष is however open to an objection. It is *prima facie* incorrect because it does not apply to cases where we infer a thing, even though it may have been previously ascertained by other proofs such as *Perception* or *Word*. We

have for instance the injunction of the *Śruti*, आत्मा वा अरे द्रष्टव्यः श्रोतव्यो मन्तव्यो निदिध्यासितव्यः¹ in which आत्मा is first directed to be heard and then reflected, and then contemplated upon. श्रवण is acquiring the knowledge of the Soul from the Vedas, while मनन comprehends reasoning or inference. But how can inference work if the Soul is already ascertained by श्रवण, and is therefore no longer संदिग्ध ? And yet the injunction being that of infallible *Śruti* cannot be groundless. It is not necessary therefore that the पक्ष in an inference should be संदिग्ध. Besides even in ordinary life we often practise inference, although the साध्य is actually observed or otherwise ascertained, as when we wish to corroborate our observation of fire on the mountain by the additional evidence of an inference. The definition of पक्ष is therefore inaccurate. The author's reply to this objection is not quite clear. The true definition of पक्ष, says T. D., is "a thing which is the substratum of the पक्षता as already defined, viz. सिषाधयिषाविरहसहकृतसिद्धयभावः"² That is quite true, but does the author thereby admit that the definition of पक्ष given here is wrong ? And if so, why did he insert it at all ? The difficulty will, however, be removed by taking the word संदिग्ध in the sense of, not doubtful absolutely, but doubtful for the time being, or doubtful in the precise way in which an inference ascertains the साध्य. The आत्मा for instance might have been known from *Śruti*, but mere verbal knowledge of a thing is not sufficient to dispel all doubts and questionings which often obstruct the free working of the intellect. Arguments of both साधक and बाधक kinds are needed to remove these doubts and make our knowledge absolutely certain. Similarly though fire may have been actually observed, our senses often mislead us, and there is no positive certainty until independent reasoning corroborates the evidence of our senses. In this sense of course the साध्य is still doubtful, even though it has been previously known.)

3. It is rather strange that Annambhaṭṭa, after having described the general nature of a mark
What is a good
hetu.
did not, before proceeding to the हेत्वाभास
or invalid reasons, mention the distinctive

¹ Brhad. Ār. Up. IV. 5, 6.

² Vide Note 6 Under Sect. 44, p. 240, *supra*.

characteristics of *valid marks*. The desideratum however has been supplied by the writers of other manuals, such as *Tarka-Kaumudī* and *Tarkāmṛita*. These essentials of सङ्केतु are five, and are thus described in T. K. :—त्रयाणां मध्ये योऽन्वयव्यतिरेकी स पञ्चरूपोपपन्न एव स्वसाध्यं साधयति । तानि पञ्च रूपाणि पक्षधर्मत्वम्, सपक्षे सत्त्वम्, विपक्षाद्व्यावृत्तिः, अबाधितविषयत्वम्, असत्प्रतिपक्षत्वं चेति.¹ The five requisites of a good हेतु are :—(1) existence on the पक्ष, of course at the time of making the inference; (2) existence on सपक्ष दृष्टान्त; (3) non-existence on the विपक्ष; (4) non-contradiction of the subject matter by another stronger proof; and (5) absence of a counterbalancing reason on the other side, proving the negation of साध्य. The first three conditions are obviously deducible from what has been already said about the nature of the पक्ष, सपक्ष and विपक्ष. The latter two belong to the matter rather than to the form of the inference. These five requisites are necessarily present in an अन्वयव्यतिरेकि हेतु; but the other two, केवलान्वयि and केवलव्यतिसकि, being exceptional, are by their very nature wanting in one requisite each, and therefore pass on with four only. The केवलान्वयि cannot have विपक्षव्यावृत्ति because there is no विपक्ष in its case; while a केवलव्यतिरेकि cannot have सपक्षसत्त्व owing to the absence of सपक्ष itself. With these two exceptions, the requisites are essential to all inferences, and the absence of any one of them gives rise to the several fallacies. Thus the want of पक्षधर्मत्व produces आश्रयासिद्ध and स्वरूपासिद्ध; that of सपक्षसत्त्व, असाधारण-सव्यभिचार and अनुपसंहारि; that of विपक्षासत्त्व, व्याप्यत्वासिद्ध, विरुद्ध and साधारण-सव्यभिचार; and the absence of the last two gives rise to बाधित and सत्प्रतिपक्ष respectively.² This will be fully understood when the nature of the several fallacies has been explained.

4. The author of *Nyāya-Bindu* mentions only the first three as the requisites of a good हेतु, omitting the last two, perhaps because they pertain more to the matter than to the form of the हेतु, and involve what are called material fallacies. He describes this त्रिरूपहेतु thus :—“त्रैरूप्यं पुनर्लिङ्गस्यानुमये (*i. e.* पक्ष) सत्त्वमेव । सपक्ष एव सत्त्वम् । असपक्षे चासत्त्व-

1 T. K. Bom. ed. p. 12.

2 V. S. Up. Calc. ed. p. 160.

मेव निश्चितम्.¹ The *Vaiśeṣikas* too would seem to recognize a त्रिरूपहेतु. The whole *Nyāya* theory of valid reasons and the five kinds of fallacies is as a matter of fact deduced from this three-fold character of the हेतु.

SECT. LII. हेत्वाभासाः.

There are five fallacies, viz. :—1 Discrepancy, 2 Contradiction, 3 Ambiguity, 4 Futility and 5 Falsity.

1. The next six sections deal with the five groups of fallacies, an accurate knowledge of which is necessary to ensure sound reasoning. It is often as necessary to know what we are to avoid as to know what we are to accept, and hence a treatise on Logic can never be complete without a description of the various fallacies to which an inference is liable. The word हेत्वाभास is capable of two derivations and two meanings. It means a *fallacious reason*, (दुष्टो हेतुः), if dissolved either as हेतुवदाभासते 'that which looks like a हेतु but is not हेतु,' or as हेतोराभासः सदृशः 'that which resembles a हेतु,' if dissolved as हेतोः हेतौ वाभासः the word would mean a *fallacy* (हेतुदोषः), i. e. the error which underlies the apparent हेतु and makes it invalid. The difference between the two meanings is important, because it must be noted that the five-fold division of fallacies is really based on the different kinds of हेतुदोष and not on those of दुष्टहेतु. The reason of this distinction is that a single हेतु may often be vitiated by two or more errors occurring at once, each of which would fall under one or other of the five classes; but their combination will not make a separate kind of हेत्वाभास. Such a हेतु might in fact be classed under as many heads as there are fallacies involved in it. Thus if we take the syllogism, वायुर्गन्धवान् स्नेहात् the हेतु स्नेह will be found to fall under all the five heads of हेत्वाभास. Simi-

1 *Nyāya-Bindu-Tikā*, Bib. In. p. 104.

larly in घटः पटोऽस्ति कुड्यत्वात्, the हेतु कुड्यत्व has fallacies of all kinds. In द्रुगे वह्निमान् धूमात्, the हेतु is of three kinds: बाधित, सत्प्रतिपक्ष and स्वरूपासिद्ध; while in पर्वतो धूमवान् वह्नेः, the हेतु would be both साधारणसव्यभिचार and व्याप्यत्वासिद्ध. If the division had been applied to दुष्टहेतु instead of हेतुदोष, how could these mixtures of several fallacies have been classed? They can neither be put under one only of the possible heads, nor form an independent class. Hence *Naiyāyikas* have adopted the better plan of classifying all the fallacies or errors that are possible in a हेतु, and then denominating a हेतु which possessed one or more of them as fallacious in so many ways. The author of *Didhiti* remarks to the same effect : 'एकस्यैव स्नेहस्य 'अनैकान्तिकः,' 'विरुद्धः' इत्यादिपञ्चत्वव्यवहारः कथम्' इत्याशङ्कयामुत्तरम्—'उपाधेयसंकरेण्युपाध्यसंकरः' इति न्यायाद्विषयगतसंख्यामादाय दुष्टहेतौ पञ्चत्वादिसंख्याव्यवहारः; (that is, 'the fallacious reasons are divided into five classes not because only five varieties of them are possible, but because the errors which underlie them are of so many kinds.' The correct method for a *Nyāya* writer would therefore be to classify and define the five हेतुदोषs or fallacies and then to define a दुष्टहेतु as one that is infected with one or more of them.)

2. *Annambhaṭṭa* has avoided the difficulty by simply enumerating in the text only the five kinds of दुष्टहेतुs without defining हेत्वाभास (दुष्टहेतु) in general and then adding the definition of a हेतुदोष as added in T. D. The remark of *Nilakanṭha* shows that the word हेत्वाभास is used by the author in two different senses in the text and in the commentary. In the text it means a दुष्टहेतु, since the five class-names given are names of the हेतुs while the definition in T. D. is that usually given of a हेतुदोष. (The five errors in a हेतु corresponding to the five दुष्टहेतुs mentioned in the text are given by N. B. as व्यभिचार (discrepancy), विरोध (contrariety), प्रतिपक्ष (counter-balance), असिद्धि (inconclusiveness) and बाध (absurdity). The five *apparent reasons* which derive their names from these errors are respectively called सव्यभिचार (discrepant, or inconsistent), विरुद्ध (contrary), सत्प्रतिपक्ष (counter-balanced), असिद्ध (inconclusive) and बाधित (absurd or futile).

3. T. D. defines a हेतुदोष as अनुमितिप्रतिबन्धकयथार्थज्ञानविषयः, 'that which is the subject of a right knowledge which prevents a judgment.' The errors named above prevent a conclusion that would otherwise follow from the *reason* given. Thus in the syllogism द्रवो वह्निमान् धूमात्, the judgment that the lake is fiery would follow in due course, if it were not for our certain knowledge that there is no smoke on the lake. This knowledge becomes therefore अनुमितिप्रतिबन्धक and the subject of that knowledge, namely the absence of smoke on the lake, becomes a हेतुदोष. But why say यथार्थज्ञान? The word यथार्थ is used to prevent an erroneous knowledge of a दोष from obstructing even a valid अनुमिति. As for example, our familiar syllogism पर्वतो वह्निमान् धूमात् may be opposed by an erroneous perception that there is no fire on the mountain. The वह्न्यभावप्रत्यक्ष however being only a भ्रम ought not to make the हेतु in पर्वतो वह्निमान् बाधित etc.; and hence the restriction that the knowledge of बाध or any other हेतुदोष must itself be *right knowledge*, and not a भ्रम merely.)

4. The definition however is imperfect in another way, because it does not cover those हेतुदोषs, such as व्यभिचार, विरोध, साधनाप्रसिद्धि and स्वरूपासिद्धि, which do not prevent an अनुमिति *directly* but only *indirectly*, by preventing व्याप्तिज्ञान or हेतुज्ञान or परामर्श, and are thus अन्यथासिद्ध themselves so far as अनुमितिप्रतिबन्ध is concerned. *Nilakantha* therefore remarks, तत्रानुमितिपदमेव जलहल्लक्षणयानुमितितत्तद्गणान्येतरपदम् । तेन व्यभिचारादिज्ञानस्य परामर्शप्रतिबन्धकतयैव निर्वाहादनुमित्यप्रतिबन्धकत्वेऽपि व्यभिचारादिषु नाव्याप्तिः. The word अनुमिति in the definition is to be enlarged so as to include अनुमितिकरण that is परामर्श, व्याप्तिज्ञान or लिङ्गज्ञान, whatever it may be. In this way व्यभिचार and other दोषs which *directly* affect the अनुमितिकरण only but not the अनुमिति, will be included in the definition. The same result might be obtained, says the author of the *Didhiti*, by taking अनुमिति to mean not a simple judgment पर्वतो वह्निमान्, but विशिष्टानुमिति, as वह्निव्याप्यधूमवान् पर्वतो वह्निमान्. Other writers like T.K. avoid the difficulty by actually introducing the word तत्करण after अनुमिति in the definition.

5. After knowing what a हेतुदोष is, it is easy to define a दुष्टहेतु as निरुक्तदोषवान्. Another definition of a दुष्टहेतु given by T. B. and Śaṅkara *Erroneous reasons or fallacies.* Miśra is यस्व हेतोर्यावन्ति रूपाणि गम-कतौपयिकानि तदन्यतरूपहीनः, 'wanting in any of the five or four requisites of a good हेतु'.¹ This latter definition is simpler as well as more scientific, because it takes away the necessity of recognizing so many हेतुदोषs, all of which can in fact be reduced to the absence of one or more of the five requisites of a सद्देतु.

6. Although all writers are practically agreed as to the definition of a हेत्वाभास, there is no such unanimity about its number. The chief divergence of views is between the Naiyāyikas, who on the authority of Gotama recognize five fallacious reasons mentioned by Annambhaṭṭa, and the Vaiśeṣikas, who following Kaṇāda accept only three, namely, सव्यभिचार, विरुद्ध and असिद्ध. The divergence is not however radical, for the last two, सत्यतिपक्ष and बाधित, which Gotama enumerates separately, are included by Vaiśeṣikas either under आश्रयासिद्ध or under सव्यभिचार or अनैकान्तिक as it is often called.² Again the names of the several हेत्वाभासs are not the same in all books. Gotama names the five, as सव्यभिचार, विरुद्ध, प्रकरणसम, साध्यसम and अतीतकाल.³ Of these the first two are identical with those given by Annambhaṭṭa. प्रकरणसम is defined as that which leaves the conclusion doubtful, owing to the opposition of an equally strong argument on the other side,⁴ and is therefore the same as our सत्यतिपक्ष. A साध्यसम हेतु is that which is as doubtful as the साध्य, and which is therefore असिद्ध. कालातीत corresponds to our बाधित. Kaṇāda's aphorism⁵ is a little obscure, but his doctrine is unmistakably summed up in the verse of an unknown writer, quoted by Praśastapāda, विरुद्धासिद्धसंदिग्धमालिङ्गं काश्यपोऽब्रवीत् । 'Kāśyapa or Kaṇāda declared three false reasons, विरुद्ध, असिद्ध and संदिग्ध.' Of these विरुद्ध and असिद्ध

1 V. S. Up. Calc, ed. p. 159.

2 Ibid p. 150.

3 G. S. I. 2, 45.

4 G. S. 2, 48.

5 V. S. III. I, 15.

are the same as ours, while संदिग्ध corresponds to सव्यभिचार or अनैकान्तिक. A fourth one named अनध्यवसित is also added by some writers, but it is, says Śaṅkara Miśra, identical with अनुपसंहारि and therefore comes under अनैकान्तिक. Buddhists, like the author of *Nyāya-Bindu*, adopt the enumeration and terminology of Kaṇāda. The sub-divisions of सव्यभिचार and असिद्ध appear to be the work of modern writers.

7. It is obvious that the difference between Gotama and Kaṇāda mainly lies in the recognition of सत्यप्रतिपक्ष and बाधित. These together form a separate group of *material* fallacies, as distinguished from the other three, which may for convenience be called *formal* fallacies. Many European logicians regard *material* fallacies as being out of the province of logic, and a similar reason may have prompted Kaṇāda to exclude सत्यप्रतिपक्ष and बाधित from his list of हेत्वाभासs. The exclusion of असत्यप्रतिपक्षत्व and अबाधितत्व (which correspond to the two हेत्वाभासs सत्यप्रतिपक्ष and बाधित) by some writers from among the five requisites of a good हेतु may be accounted for on the same ground. It must however be stated, to prevent any misunderstanding, that there is in Indian Logic no such clearly marked division of *formal* and *material* fallacies as was laid down by Aristotle under the two names of *fallacia in dictione*, and *fallacia extra dictionem*. It will be found later on that some varieties of अनैकान्तिक and असिद्ध, when reduced to an English syllogism, disclose *material* fallacies, while others are *formal* fallacies. The fact is that the peculiar form of Sanskrit syllogism did not permit a clear demarcation of *formal* from *material* fallacies, nor are the two so separated in practice. Most of the so-called *formal* fallacies involve *material* misconceptions or overstatements, while almost all the *material* fallacies can be avoided by a strict adherence to the syllogistic *form*. The distinction is purely artificial, and has not been observed by the *Naiyāyikas*.

SECT. LIII. सव्यभिचारः.

The discrepant reason is one that coexists partially. It is threefold, over-wide, peculiar and non-exclusive. One that coexists with negation of the thing to be proved is over-wide; e. g. mountain is fiery because it is knowable, since knowability exists with absence of fire on a lake. Peculiar is that which is not found either in similar or contrary instances; e. g. Sound is eternal because it is Word. The genus word is absent from all eternal and non-eternal things, and resides in Sound only. Non-exclusive is that which has neither similar nor dissimilar instances; e. g. Everything is transitory because it is knowable. Here everything being the subject of inference, there is no separate example.

1. सव्यभिचार is व्यभिचारेण सह वर्तमानः 'that which involves a व्यभिचार or discrepancy of the हेतु with the साध्य.' It is defined as अनैकान्तिक, or 'co-existing with the साध्य only partially.'

Discrepant reason. Thus if one says नित्यः शब्दोऽस्पर्शत्वात् । यत्र यत्रास्पर्शत्वाभावः (स्पर्शवत्त्वं) तत्र तत्रानित्यत्वं यथा मृत्कुम्भे, the हेतु will be अनैकान्तिक or व्यभिचरित, because there are the earthy atoms which though स्पर्शवत् are नित्य just as there is बुद्धि which is both अस्पर्श and अनित्य. Hence the व्याप्ति is not correct; that is, the हेतु co-exists partially with the साध्य, partially with the साध्याभाव, and entirely with neither. Vātsyāyana explains the word अनैकान्तिक as, नित्यत्वमेकोऽन्तः । अनित्यत्वमेकोऽन्तः । एकस्मिन्नन्ते विद्यत इति ऐकान्तिकः विपर्ययादनैकान्तिक उभयान्तव्यापकत्वात्.' The word सव्यभिचार implies the same thing, for व्यभिचार or सव्यभिचारत्व has been defined साध्यसंदेहजनकोभयकोटिचुपस्थापकतावच्छेदकरूपवत्त्वम्, that is, 'it is a property which leads to the proof of both, साध्य and its negation, and thus causes doubt about the साध्य. The सव्यभिचार has a tendency to prove both साध्य and its negation because it is coexistent with both; and the simultaneous knowledge of these two extremes, produces संदेह of the साध्य which is उभयकोटिकज्ञान. Hence Kaṇāda calls अनैकान्तिक by the name of संदिग्ध.

2. सन्ध्याभिचार is subdivided into three varieties साधारण (*Over-wide*), असाधारण (*Peculiar*) and अनुप-
Its three varieties. संहारी (*Non-exclusive*). Of these साधारण or the *over-wide mark* is ' that which is found both on the सपक्ष and the विपक्ष, that is, which co-exists both with साध्य and its negation'. *Annambhatta* defines a साधारण simply as one that coexists with साध्याभाव, but the full definition would be that given by T. K. सपक्षविपक्षवृत्ति. The reason why *Annambhatta* omits सपक्षवृत्ति from his definition is that it is necessarily implied in an अन्वयिहेतु, such as the साधारण is, and need not therefore be particularly mentioned. As an illustration of साधारण the author gives " Mountain is fiery, because it is knowable "; where the reason, ' knowability,' exists both in things known to possess fire as the ordinary hearth, and also things that have no fire, as a lake. The प्रमेयत्व being thus associated with both वह्नि and वह्न्यभाव, there is no reason why one should be inferred from it and not the other; but both cannot exist together and hence the हेतु is fallacious. Similarly in पर्वते धूमवान् वह्नेः, the हेतु वह्नि is साधारण, being found to co-exist both with धूम in महानस and with धूमाभाव in अयोगोलक.

3. The असाधारण or *Peculiar* is just the opposite of साधारण, being found neither in सपक्ष nor in विपक्ष.
Peculiar mark. Its absence in the विपक्ष is of course natural, because even a good हेतु is non-existent in विपक्ष; but the fallacy of असाधारण consists in its being absent in सपक्ष also. If the साधारण is over-wide, owing to its trespassing on the forbidden region of विपक्ष, this is not wide enough as it does not even cover the legitimate ground of सपक्ष. One errs on the side of excess, the other on that of defect; and thus both are equally fallacious. The असाधारण, in fact, as its name denotes, is a peculiar characteristic of the पक्ष which exists nowhere else, and for which therefore no सपक्षदृष्टान्त can be found. As for example, if we say, " Sound is eternal, because it has the nature of sound," the nature of sound, शब्दत्व, is a peculiar characteristic of sound; and being so, can lead to no valid conclusion. In this case the सपक्ष instances, *e. g.* those having the साध्य नित्यत्व, would be ether and other eternal

things, while the विपक्ष instances would be all non-eternal products, such as a jar. The हेतु शब्दत्व exists in neither, and hence it is called असाधारण.

4. (The third variety of सव्यभिचार is अनुपसंहारि (Non-exclusive) which is defined in the text as 'one that has neither a सपक्ष nor a विपक्ष दृष्टान्त,' that is, which is never present where the साध्य is present, excepting of course the पक्ष itself. Now this can happen only when all things in this world are included in पक्ष, and so nothing is left outside the range of पक्ष that can be denominated सपक्ष or विपक्ष. The definitions given in T. K. and T. A. make this quite clear. They are, वस्तुमात्रपक्षकः or सर्वपक्षकः, 'one in which the universality of things is the पक्ष,' that is, one in which the साध्य is unascertained (संदिग्ध) of all things in the world, and there is therefore no सपक्ष or विपक्ष where the साध्य or its negation might be said to be ascertained (निश्चित). The example given in the text is "All things are transient, because they are knowable," where सर्व being the पक्ष, there is no सपक्ष or विपक्ष apart from it. But why cannot the individuals, says an objector, serve as सपक्ष or विपक्ष? that is, why cannot we argue, सर्वमनित्यं । प्रमेयत्वात् । यत्र यत्र प्रमेयत्वं तत्रानित्यत्वं । यथा घटे पटे कुड्ये वा ? It cannot be said that the साध्य being संदिग्ध in सर्व, it is necessarily so in घट, पट and कुड्य ; for first the साध्य (प्रमेयत्व) may be निश्चित in the पक्ष at one time, and be संदिग्ध at another ; and secondly uncertainty as to the whole does not necessarily imply an equal uncertainty as to individuals or some parts of that whole. घट and पट therefore which are certainly transient might very well serve as सपक्षदृष्टान्त to prove अनित्यत्व on सर्व. To remove this objection modern Naiyāyikas define an अनुपसंहारि as केवलान्वयिधर्मसाध्यकः 'one in which the साध्य is only positively connected with the हेतु,' and so there is neither a व्यतिरेकव्याप्ति nor a व्यतिरेकदृष्टान्त. But this latter definition also is faulty, as it would apply even to a केवलान्वयि सद्देतु. The proper answer to the first objection would be that in an अनुपसंहारि, although there may be individual things in which the अनित्यत्व is ascertained, there is no व्याप्ति either of the अन्वयि or of the व्यतिरेकि kind, since the conclusion itself constitutes the widest possible generalization. The name अनुपसंहारि, (Non-exclusive) is given

to this fallacy because the पक्ष being universal nothing is excluded from it.

5. Now it may be asked, why are these three fallacies, apparently so dissimilar, and the last a quite anomalous case, classed under सव्यभिचार ? A closer examination of the definitions and examples of the three varieties will however show that there is a common principle underlying the division, and that principle is derived from the general definition of सव्यभिचार itself.

A सव्यभिचार or *discrepant* reason has been defined as

The three-fold division explained.

‘one which is not uniformly concomitant with साध्य,’ that is, which uniformly exists neither with साध्य nor with साध्याभाव. It

is neither purely अन्वयि, nor purely व्यतिरेकि, nor both completely, but half of this and half of that. It is thus defective in either or both of the two requisites of a सद्देतु, namely, सपक्षसत्त्व and विपक्षव्यावृत्ति. Now there are four and only four ways in which the two properties may be predicated of a हेतु, namely, both may be present, both may be absent, or either may be present when the other is absent. Thus we have four cases : (1) presence of both सपक्षसत्त्व and विपक्षव्यावृत्ति ; (2) absence of both of them ; (3) presence of सपक्षसत्त्व, but absence of विपक्षव्यावृत्ति ; (4) absence of सपक्षसत्त्व but presence of विपक्षव्यावृत्ति. The first is undoubtedly a case of सद्देतु, as both the requisites are present, and may therefore be left out. In the latter three cases the हेतु is obviously defective, and is respectively called अनुपसंहारि, साधारण and असाधारण. अनुपसंहारि has been defined as one that has neither a सपक्ष nor a विपक्ष दृष्टान्त ; that is, there is no सपक्ष on which the हेतु co-exists with साध्य nor a विपक्ष from which the हेतु is व्यावृत्त just as the साध्य is. अन्पसंहारि has therefore neither of the two properties सपक्षसत्त्व and विपक्षव्यावृत्ति. The third case is that of a साधारण which is defined as existing both on the सपक्ष and the विपक्ष ; that is, there is सपक्षसत्त्व but no विपक्षव्यावृत्ति. The fourth is असाधारण which, as non-existing on both सपक्ष and विपक्ष instances, possesses only विपक्षव्यावृत्ति, but not सपक्षसत्त्व. These three varieties are thus nothing but the three possible ways in which the अनैकान्तिकत्व (defectiveness) of a सव्यभिचार may occur.

6. One more point remains to be noticed in connection with these, and especially the last two साधारण and असाधारण, namely, in what respect they do respectively differ from केवलान्वयि and केवलव्यतिरेकि सद्हेतुs. The instances of साधारण and असाधारण given in the text are very similar to those given for केवलान्वयि and केवलव्यतिरेकि, and no distinction can at first sight be made between the two pairs. A comparison of the illustrations will however show the difference. Thus पर्वतो वह्निमान् प्रमेयत्वात् is a साधारण, while पर्वतोऽभिधेयः प्रमेयत्वात् is a केवलान्वयि. The difference between the two lies in the साध्य which is co-extensive with the हेतु in the latter case, but not so in the first. Similarly पृथिवीतरेभ्यो भियते पृथिवीत्वात् or गन्धवत्त्वात् is केवलव्यतिरेकि, while पृथिवी नित्या पृथिवीत्वात् will be असाधारण, the difference being the same, namely, that the साध्य in a केवलव्यतिरेकि is co-extensive with the हेतु, but not so in the असाधारण. Now why should this difference make one a good and the other a bad inference? The reason is obvious. When the साध्य and हेतु coincide with each other, there is no व्याभिचार or discrepancy between the two, although we cannot always have a सपक्ष or विपक्ष दृष्टान्त. The essence of साधारण and असाधारण lies not so much in the absence of सपक्ष or विपक्ष दृष्टान्त, but in the imperfect generalization, the absence of the दृष्टान्त only indicating the व्याभिचार or defect in the व्याप्ति.

SECT. LIV. विरुद्धः.

Contrary reason is that which is pervaded by the negation of the thing to be proved, e. g. Sound is eternal because it is created. Creatability is covered by the negation of eternity or transitoriness.

1. विरुद्ध or contrary reason is 'that which is less extensive than the negation of साध्य and is never coexistent with साध्य.' As when we say, 'Sound is eternal, because it is artificial,' the reason, 'artificialness' coincides with नित्यत्वाभाव or अनित्यत्व and not with नित्यत्व. We have the व्याप्ति, यत्र यत्र

कृतकत्वं तत्रानित्यत्वं यथा घटे, but not यत्र यत्र कृतकत्वं तत्र नित्यत्वम्. The हेतु कृतकत्व being thus नित्यत्वाभावव्याप्य, it becomes a साधक or हेतु of that अभाव, and not of its प्रातियोगि नित्यत्व; that is, the artificialness of sound is exactly the reason why sound should be non-eternal. Thus the fallacy consists in drawing a conclusion just *contrary* to that which would be justified by the reason. This accords well with Gotama's definition सिद्धान्त-मभ्युपेत्य तद्विरोधी विरुद्धः. ' a विरुद्ध is that which is *contrary* to the conclusion desired to be drawn. '

2. विरुद्ध differs from साधारण सव्यभिचार in never existing on the सपक्ष as the latter does ; while it differs from असाधारण in existing on the विपक्ष unlike the latter which does not. The chief distinction between सव्यभिचार and विरुद्ध is that in the former the व्याप्ति is only imperfect or defective, while in the latter it is actually *contrary*. There is only a *discrepancy* in the first ; there is direct *opposition* in the second.

SECT. LV. सत्प्रतिपक्षः.

The ambiguous or inconclusive reason is that wherein there is another reason proving the negation of the thing to be proved ; e. g. Sound is eternal, because it is audible like any other sound ; and sound is non-eternal, because it is a creation-like a jar.

The सत्प्रतिपक्ष differs from the विरुद्ध in this, that while in the latter the very same हेतु which ought to prove साध्याभाव is given as a reason for proving the साध्य, in सत्प्रतिपक्ष the हेतु which proves साध्याभाव is different (हेत्वन्तर) from that actually given. For example, if we say 'Sound is eternal, because it is apprehended by the organ of hearing,' the हेतु given, namely श्रावणत्व, does not prove नित्यत्व ; but neither does it prove नित्यत्वाभाव. The अनित्यत्व however is proved by another हेतु कृतकत्व, in such an inference as, ' Sound is non-eternal, because it is artificial. ' In विरुद्ध the हेतु is inconsistent with साध्य in the same inference; in सत्प्रतिपक्ष it is inconsistent with the साध्य in a *contrary* inference. सत्प्रतिपक्ष is,

classed by *Vaiśeṣikas* under बाधित, of which it is in one sense a species ; but there is a clear distinction between the two. In बाधित the साध्य of the inference in question is actually disproved by a stronger proof of another kind, such as *perception* ; as for instance, if one says " Fire is cold because it is a substance, " the अनुष्णत्व is proved to be false by our actual *perception* of the heat of fire, according to the maxim प्रत्यक्षेणानुमानं बाध्यते. In सत्प्रतिपक्ष there is no such बाध of the inference by a stronger proof, but only a counterbalancing of two inferences, which, being of equal weight, are mutually destructive, but neither prevails over the other. This peculiarity of सत्प्रतिपक्ष was well expressed by the more significant name प्रकरणसम (Inconclusive) which *Gotama* gave it. *Gotama's* definition of प्रकरणसम is यस्मात् प्रकरणचिन्ता स निर्णयार्थमपादिष्टः प्रकरणसमः¹ । प्रकरण is an argument and its चिन्ता is the curiosity (जिज्ञासा) or expectancy (आकांक्षा) which is created in the course of the argument, and remains until it is satisfied by a certain and well-grounded conclusion. An inference which is inconsequential owing to being *counterbalanced* (or opposed by a contrary inference of equal weight) does not remove this प्रकरणचिन्ता ; and hence a प्रकरणसम is defined as ' a हेतु which though propounded for the purpose of giving a certain conclusion (निर्णयार्थमपादिष्टः) leaves the expectation of a certain conclusion unfulfilled. ' It is therefore प्रकरणसम, that is, as *Vātsyāyana* explains it, प्रकरणमनतिवर्तमानः ' always remaining in the stage of a non-concluded argument. ' The word सत्प्रतिपक्ष also conveys the same sense, but rather distantly. The author of *Didhiti* interprets it as सन्न (विद्यमानः) विरोधिष्व्याप्त्यादिमत्तया परामुद्ध्यमानो हेतुः विरोधिपरामर्शो वा यस्य परामुद्ध्यमानस्य हेतोरसौ सत्प्रतिपक्षः. To understand this derivation, it must be observed that when there are two mutually destructive inferences containing the two हेतुs that are प्रतिपक्ष of each other, the judgment is impeded because the two हेतुs give rise to distinct परामर्शs leading to quite contrary conclusions. It is needless perhaps to point out that a सत्प्रतिपक्ष हेतु is such, only so long as it is of equal weight with its contrary (तुल्यबलयोरेव सत्प्रतिपक्षत्वं नातुल्यबलयोरिति नियमः). As soon as the प्रतिपक्ष becomes stronger by any reason, the former ceases to be a सत्प्रतिपक्ष, and becomes

अवाधित. Thus if there are two arguments, one in harmony with the *Śruti* or any other आप्तवाक्य, and the other opposed to it, the latter is बाधित on account of the greater weight of the former.

SECT. LVI. असिद्धः

Futile reason is of three sorts: having non-existent subject, non-existent reason, and non-existent concomitance. Non-existent subject is thus:—Skyey lotus is fragrant because it is a lotus like a lotus in a lake. Here skyey lotus is the subject, but it does not exist at all. A Non-existent reason is this:—Sound is a quality because it is ocular. Here Sound is not ocular as it is audible. Non-existent concomitance is one which involves a limitation or condition. Condition is that which pervades the thing to be proved, but does not pervade the reason. Pervasion of the thing to be proved means not having absolute negation co-existent with the thing; while non-pervasion of reason means having absolute negation co-existing with the reason. In 'the mountain is smoky because it has fire,' contact with wet fuel is the condition. For instance wherever there is smoke there is contact of wet fuel. Where there is fire, not necessarily is there contact of wet fuel; e. g. there is no contact of wet fuel in an iron ball. Thus wet fuel is the condition because it pervades the thing to be proved and does not pervade the reason. Fieriness is a futile reason owing to the condition.

1. The fourth हेत्वाभास is असिद्ध 'inconclusive or unproved reason, which *Gotama* calls साध्यसम (similar to साध्य), on account of its being as doubtful as the साध्य.' An असिद्ध हेतु is one that has the दोष called असिद्धि, and असिद्धि is defined by *Udayanācārya* as व्याप्तस्य पक्षधर्मतया प्रामितिः सिद्धिस्तदभावः 'absence of the सिद्धि which consists in the true cognition of the साध्य-व्याप्यहेतु as a property of the पक्ष;' or, briefly speaking, असिद्धि is the non-production of परामर्श. Hence असिद्धि has been

defined as any cause, other than a व्याभिचार (which gives rise to सव्यभिचार), which obstructs the knowledge of परामर्श. As परामर्श (व्याप्तिविशिष्टपक्षधर्मताज्ञान) is composed of three elements, corresponding to the three terms of the syllogism, namely व्याप्ति, पक्षता and पक्षधर्मता or हेतुता, the obstruction to the knowledge of परामर्श will be caused by a defect or error in the apprehension of any of its three constituents. Thus an असिद्ध हेतु naturally resolves into three varieties, formed according as the error lies in the knowledge of पक्ष, or of हेतु or of व्याप्ति. The first is called आश्रयासिद्ध, the second स्वरूपासिद्ध, and the third व्याप्यत्वासिद्ध.

2. Annambhatta only enumerates the three varieties, without defining either असिद्ध in general or its first two varieties. आश्रयासिद्ध is defined

*First kind of
Asiddha.*

as पक्षतावच्छेदकभाववत्पक्षकः, that is, a 'हेतु' the subject or place of which is devoid of the distinctive character of the supposed पक्ष. Thus in the example, "A sky-lotus is fragrant, because it is a lotus," the reasoning would be correct if the पक्ष sky-lotus were a real thing; but being only an imaginary thing, it is devoid of the essence of the supposed पक्ष, namely गगनीयत्व. Here the पक्ष is not अरविन्द simply, but गगनीयत्वविशिष्ट or गगनीयत्वावच्छिन्न अरविन्द and hence the पक्षतावच्छेदक or the essence of पक्षता is गगनीयत्व which never exists on an अरविन्द. In this case, being misled by the metaphorical application of the word अरविन्द to गगनारविन्द we attribute the qualities of a real lotus to a fictitious thing, the existence of which is quite hypothetical or unproved. Here the पक्षतावच्छेदकधर्म is गगनीयत्व, because it distinguishes गगनारविन्द, the पक्ष in this case, from other lotuses; and as अरविन्द itself is a real thing, the falsity of गगनारविन्द must be due to the non-existence of its अवच्छेदक, the गगनीयत्व, according to the maxim, when a property predicated of a qualified thing (विशिष्ट) cannot reside in the qualified (विशेष्य) it is attributed to the qualification (सति विशेष्ये बाधे विशिष्टा बुद्धिर्विशेषणमुपसंक्रामति). In the present instance there is on the पक्ष the non-existence of the पक्षतावच्छेदकधर्म, that is, गगनीयत्व. An आश्रय or पक्ष however may be असिद्ध in two ways, either by being altogether non-existent, as in the above example, or by wanting the character of पक्षता, that is सिषाद्ययिषाविरह etc. Take, for example, शरीरं हस्तादिमत् हस्तादिमत्तया प्रतीयमानत्वात्.

Here the हेतु being identical with the साध्य (हस्तादिमत्त्व), the argument is mere सिद्धसाधन, 'proving what is already proved.' As there is no सिद्धयभाव here, the पक्ष is wanting in the essential character of पक्षता, and is therefore असिद्ध. Hence T. D. remarks under the next section that according to ancients सिद्धसाधन comes under आश्रयासिद्ध, while moderns regard it as a separate निग्रहस्थान and not a fallacy.

3. The second variety स्वरूपासिद्ध, *non-existence*, is so called because in it the हेतु itself is असिद्ध, *i. e.*

The second kind.

non-existent on the पक्ष; as in the example given in the text, the हेतु चाक्षुषत्व does not

exist on शब्द. Other examples of स्वरूपासिद्ध are द्रवो वह्निमान् धूमात्, घटः पृथिवी पटत्वात्, सामान्यमनित्यं कृतकत्वात्, or शशादि-
रत्नो विषाणित्वात्, in all of which it will be marked that the हेतु is non-existent on the पक्ष. It differs from आश्रयासिद्ध in this, that in the latter the आश्रय is either false or not a proper पक्ष, while in the former, both हेतु and आश्रय may be real things but there is no connection between them, or rather the negation of हेतु, and not the हेतु, resides in the पक्ष. स्वरूपासिद्ध has many sub-varieties, such as शुद्धासिद्ध, भागासिद्ध, विशेषणासिद्ध and विशेष्यासिद्ध, all of which ultimately resolve into the general characteristic that the हेतु, as it is taken, is non-existent on the पक्ष. In this respect स्वरूपासिद्ध may be said to be complementary to सत्यभिचार, सत्यतिपक्ष and बाधत. The three varieties of सत्यभिचार, as has been already shown, turn on the existence or the non-existence of two of the five requisites of a सद्धेतु, namely सपक्षसत्त्व and विपक्षव्यावृत्ति; while सत्यतिपक्ष and बाधित are due to the neglect of the last two requisites. (स्वरूपासिद्ध is due to the absence of the first and the most important requisite, namely पक्षधर्मत्व. Not that the हेतु is unreal or non-existent in itself, but that it lacks the essential character of हेतुता, namely पक्षधर्मता. The real definition of a स्वरूपासिद्ध therefore is हेतोः पक्षावृत्तित्वम्.)

4. व्याप्यत्वासिद्ध, *non-existent concomitance* or *improper limitation*, is defined by Annambhaṭṭa as 'a

The third kind.

mark which has a (suppressed) condition (उपाधि), that is, which is true conditionally

only. T. K. and the older writers generally define it as साध्यव्याप्यतावच्छेदकरहितो हेतुः 'a mark which is devoid of the distinguishing attribute that is necessary to make it साध्य-

व्याप्य. When the हेतु, in the form in which it is given, is not known to be *invariably* accompanied by the साध्य it is not साध्यव्याप्य, that is, its व्याप्यत्व is असिद्ध or doubtful. Such a हेतु is wanting in the proper व्याप्यतावच्छेदकधर्म, either by excess when it is too generally stated, or by defect when it is unnecessarily restricted by a limitation that might be totally false or superfluous. Any way the हेतु is different from what it ought to be, and its साध्यव्याप्यत्व is therefore questionable. A स्वरूपासिद्ध हेतु does not exist on the पक्ष; while a व्याप्यत्वासिद्ध is not *invariably* associated with साध्य. In one the पक्षधर्मता is vitiated; in the other the व्याप्ति is faulty. The stock example is पर्वतो वह्निमान् काञ्चनमयधूमात्, 'the mountain is fiery because it has golden smoke.' Here although mere धूम is वह्निव्याप्य, काञ्चनमयधूम is not; for the additional epithet makes it a different thing which is not invariably associated with fire. In this example the व्याप्यत्वावच्छेदक धर्म is not mere धूमत्व but काञ्चनमयधूमत्व or rather काञ्चनमयत्व, which does not exist on the हेतु; and hence धूम is व्याप्यत्वासिद्ध.

5. So far there is not much difference of opinion, but ancients and moderns are as usual divided as to the exact scope of this fallacy. In the above example, the epithet काञ्चनमय is not only superfluous, but makes the हेतु unreal. Suppose however we have पर्वतो वह्निमान् नीलधूमात्. Here although the adjective नील is superfluous, it does not make the हेतु actually false, and the argument will in spite of it be valid. Hence the moderns regard it, not as a case of हेत्वाभास, but only as a fault of language, called अधिक (tautology). The ancients however include the case under व्याप्यत्वासिद्ध, because नीलत्व, being a needless limitation of धूम, is as misleading as काञ्चनमयत्व, and cannot therefore be the proper व्याप्यतावच्छेदक धर्म. The reason why this is regarded as व्याप्यत्वासिद्ध fallacy by the ancients appears to be that the addition of the qualification नीलत्व conveys by implication that, unqualified धूम is not वह्निव्याप्य, and that it is the limitation नीलत्व that brings it within the pale of the व्याप्ति. नीलत्व thus becomes व्याप्यतावच्छेदक which it really is not.

6. Now this असिद्धि of व्याप्ति may occur in two ways, either when the concomitance is not proved owing to its non-observation in any other place, or when it is actually proved to be false owing to the presence of some उपाधि or condition. Accordingly there are two varieties of व्याप्यत्वासिद्धि, (1) साध्ये-नासहचरितः 'not concomitant with साध्य'; and (2) सोपाधिक-साध्यसंबन्धः 'concomitant with साध्य only conditionally.' The instance of the first is शब्दः क्षणिकः सत्त्वात् । यद्यत्सत्क्षणिकं यथा घनः, where the invariable concomitance of सत्त्व and क्षणिकत्व is not proved. The cases of काश्चनमयधूम and नीलधूम would also apparently come under this class, because there too the व्याप्ति is not proved. The other variety is that of a conditional व्याप्ति and is ordinarily known as सोपाधिक हेतु. The familiar example of a सोपाधिक is पर्वतो धूमवान् वह्निः, where वह्नि is not धूमव्याप्य absolutely, but becomes so only when we add the condition आर्द्रेन्धनसंयोगे सति ; that is, fire in general is not invariably accompanied by smoke, but fire in contact with wet fuel is. Hence the हेतु in this case, namely वह्नि, is made साध्य-व्याप्य only when we add to it the limitation आर्द्रेन्धनसंयोगवान्. The हेतु is too widely stated and requires to be restricted to make the व्याप्ति true. In one sense this case is the converse of काश्चनमयधूम. In that case the fallacy consisted in the addition of an unnecessary restriction, while in this, it consists in the omission of a necessary one. In both cases, however, the व्याप्यतावच्छेदक is equally false, and hence the general definition of a व्याप्यत्वासिद्धि applies to both.

7. After having comprehended what व्याप्यत्वासिद्धि really is, the student will be in a position to understand and correctly estimate *Annambhatta's* definition. *Annambhatta's* statement that a सोपाधिक हेतु is व्याप्यत्वासिद्धि. There is a difference of opinion as to the true meaning of this statement. S. C. takes it as a definition of व्याप्यत्वासिद्धि, but it will be seen from what has been said above that सोपाधिक can properly be a definition of only one kind of व्याप्यत्वासिद्धि, and does not at all apply to instances like काश्चनमयधूम. On the other hand *Nilakantha* seems to take the statement not as a definition, but as a reply to those who class सोपाधिक as a separate हेत्वाभास. The interpretation of *Nilakantha* would undoubtedly be preferable.

as it saves the author from a palpable error ; but there is against it the unequivocal statement of T. D. व्याप्यत्वासिद्धस्य लक्षणमाह सोपाधिक इति. We have no choice therefore but to agree with S. C. in taking the sentence as a definition. There are only two suppositions on which *Annambhaṭṭa's* definition can be reconciled with the general doctrine of व्याप्यत्वासिद्ध. Either he included instances like काश्चनमयधूमात् and शब्दः क्षणिकः सत्त्वात् under सोपाधिक itself, or he relegated them to some other head of हेत्वाभास. Both suppositions are plausible and may be partly true. In the inference, for example, शब्दः क्षणिकः सत्त्वात् we can conceive of an उपाधि such as उत्पत्तिमत्त्वे सति, or ध्वंसप्रतियोगित्वे सति, so that ether and other eternal things may not be क्षणिक simply because they exist. Thus the हेतु सत्त्व will be सोपाधिक. Similarly we might regard काश्चनमयधूमात् as an instance of स्वरूपासिद्ध, since, there being no such thing as काश्चनमयधूम in the world, the हेतु is non-existent on the पक्ष. In this manner we can perhaps justify *Annambhaṭṭa's* definition ; but the fact that it is inconsistent with the express views of other eminent authorities such as *Gaṅgeśa*, *Raghunātha*, and *Viśvanātha* is undeniable. On the other hand there is a distinct school of writers who exclude even the सोपाधिक proper from the class of असिद्ध हेतु, and put it under सव्यभिचार ; and their reasoning is very plausible. उपाधि, they say, vitiates व्याप्ति, which in its turn destroys परामर्श. उपाधि is therefore not a direct cause of अनुमितिप्रतिबन्ध. उपाधि produces व्यभिचार of व्याप्ति, and that व्यभिचार obstructs the अनुमिति. उपाधि therefore being अन्यथासिद्ध is not itself a हेतुदोष, the real दोष in all the सोपाधिक हेतुs being the व्यभिचार which springs from उपाधि. Hence सोपाधिक is in fact only a species of सव्यभिचार. The difference between this view and the generally accepted opinion is that the former includes the सोपाधिक under सव्यभिचार because there is the व्यभिचार, while the latter includes it under व्याप्यत्वासिद्ध because there is the असिद्धि of व्याप्ति.

8. A question here arises as to what distinction can be made between व्यभिचार and असिद्धि of व्याप्ति.

Asiddhi distinguished from Vyabhicāra.

The distinction is important, because it is that on which the difference between a व्याप्यत्वासिद्ध and a साधारण सव्यभिचार depends.

Apparently the two are identical, because both of them denote the break of the *invariable concomitance* of साध्य and हेतु. The distinction is rather nicely drawn, but it is real. It is that व्यभिचार is positive while व्याप्यत्वासिद्धि is negative. व्यभिचार is the cause which actually disturbs the *invariable concomitance*; असिद्धि is only the absence of that *concomitance*. व्यभिचार is the *certainty* that the व्याप्ति is false, असिद्धि is the *uncertainty* that it is real. व्यभिचार is therefore stronger and more palpable, while असिद्धि occurs more frequently in practice and is not easily detected. Instances often occur in which we strongly suspect that the generalization is imperfect, but we cannot positively say why it is so. The example शब्दः क्षणिकः सत्त्वात् is of this kind, for we can neither say that क्षणिकत्व and सत्त्व are associated, nor that they are not. To take a common instance, both gravity and elasticity being common properties of all matter are found invariably associated with each other; and yet we cannot say that one is व्याप्य of the other. The concluding remark of N. B. where this distinction is expressed in a peculiarly technical language, though somewhat obscure, amounts to the same thing. T. D.'s dictum that in साधारण there is अव्यभिचाराभाव, *i. e.* व्यभिचार, while in व्याप्यत्वासिद्ध there is विशिष्ट-व्याप्त्यभाव, is really the same distinction expressed in a slightly different way. In साधारण we are assured of the non-existence of व्यभिचाराभाव, *i. e.* of the actual existence of व्यभिचार, while in असिद्ध we are certain only of the non-existence of व्याप्ति, but cannot positively say whether there is an actually व्यभिचरित व्याप्ति.

9. व्याप्यत्वासिद्ध has been defined as सोपाधिक, but the meaning of the latter phrase cannot be understood unless we know what an उपाधि is.

Upādhi.

सोपाधिक is a हेतु that is true *conditionally*;

but what is a *condition*? Etymologically the word उपाधि is interpreted by *Udayanācārya* as उप समीपवर्तिनि आदधाति संक्रामयति स्वीयं धर्ममित्युपाधिः. It is a thing which imparts its own property to another object placed in its vicinity, as a red flower which makes the crystal placed over it look like a ruby by imparting to it its own redness, not really but seemingly. The flower is therefore the उपाधि. Similarly the all-pervading *Ākāśa* appears to have dimensions and form when

circumscribed in a jar, because the परिमितत्व of its उपाधि the षट् is for the time being imparted to it. उपाधि is therefore the *condition* or the surrounding circumstances, individually and collectively, which give a thing its distinctive character for the time being, and make it look as it appears to us. Although therefore a thing may generally belong to a class, its specific character by which we usually distinguish the thing from other species or individuals of the same class is given to it by its उपाधि. Thus though smoke may be generally said to be produced from fire, the specific and immediate cause of its production is the presence of wet fuel, for it is wet fuel that, when ignited, invariably gives out smoke. There is therefore an *invariable concomitance* (व्याप्ति) between wet fuel and smoke, for the smoke, being the immediate effect of wet fuel, cannot exist without its cause, the wet fuel. In other words धूम is आर्द्रन्धनसंयोगव्याप्य and आर्द्रन्धनसंयोग is the व्यापक of धूम. It is not however a general rule that wet fuel exists wherever there is fire, for fire may exist on dry fuel or without any fuel at all, as in a red-hot iron ball. Therefore आर्द्रन्धनसंयोग is not the व्यापक of वह्नि. Thus आर्द्रन्धनसंयोग, which is the उपाधि of धूम, that is, the *invariable condition* on which the production of smoke depends, may be described as धूमव्यापकत्वे सति वह्न्यव्यापकः, that is, it is more extensive than धूम and less extensive than वह्नि. It is intermediate between the two, and is in fact the difference by which the range of धूम is smaller than the range of वह्नि. If we take the figure on p. 283 it will correspond to the gnomon EKG, which added to the smaller square of smoke makes the larger one representing fire. When therefore we reason पर्वतो धूमवान् वह्नेः, this उपाधि invariably checks us. For if this syllogism is valid, धूम being the साध्य must be the व्यापक of the हेतु वह्नि. But आर्द्रन्धनसंयोग is already shown to be the व्यापक of धूम; *a fortiori* आर्द्रन्धनसंयोग must be the व्यापक of वह्नि. It is however shown to be the अव्यापक of वह्नि. The same thing thus becomes both व्यापक and अव्यापक of वह्नि, which is absurd. Hence the inference पर्वतो धूमवान् वह्नेः cannot be valid, that is, the हेतु वह्नि is not a सङ्केत but a हेत्वाभास.

We can deduce the same conclusion by direct reasoning. आर्द्रन्धनसंयोग is the व्यापक of धूम and वह्नि is the व्यापक of the

संयोग. *A fortiori* वह्नि is always the व्यापक of धूम, and can never be a proper हेतु for inferring the धूम, since a हेतु must be always the व्याप्य of its साध्य. A syllogism, therefore, having धूम for its साध्य and वह्नि for its हेतु or साधन, is rendered invalid on account of the presence of the उपाधि, i. e. आर्द्रेन्धनसंयोग, which being धूमव्यापक and वह्न्यव्यापक may be expressed by the general formula, साध्यव्यापकत्वे सति साधनाव्यापकः. This is in fact the definition of उपाधि given by *Annambhaṭṭa*, a definition which he has borrowed from *Udayanācārya*. In a valid syllogism, such as पर्वतो वह्निमान् धूमात् there is no such उपाधि because there वह्नि and धूम being साध्य and साधन respectively आर्द्रेन्धनसंयोग is not साध्यव्यापक and साधनाव्यापक. The definitions of साध्यव्यापकत्व and साधनाव्यापकत्व given in the text are easily understood. The first is the quality of never being the प्रतियोगि of any *absolute negation* co-existing with the साध्य, or more shortly, the property of never being absent where the साध्य is present. The second of course is just the opposite of this.

10. T. D. notices four kinds of उपाधि :—(1) that which covers the साध्य *absolutely*, that is, universally ; (2) that which covers it only in that form in which it exists on the पक्ष ; (3) that which covers it only when it is associated with साधन ; and lastly (4) that which exists in the साध्य independently. आर्द्रेन्धनसंयोग is an instance of the first kind, because it co-exists with smoke everywhere. An instance of the second kind is उद्भूतरूपवत्त्व (manifested colour) in the inference वायुः प्रत्यक्षः प्रत्यक्षस्पर्शाश्रयत्वात्, because प्रत्यक्षस्पर्शाश्रयत्व co-exists with प्रत्यक्षत्व only when it is accompanied by उद्भूतरूपवत्त्व. But this उद्भूतरूपवत्त्व is not a necessary condition for प्रत्यक्षत्व of all kinds since it does not exist in मानसप्रत्यक्ष. उद्भूतरूपवत्त्व is necessary for only that kind of प्रत्यक्ष which is possible in the case of a thing like air, that is, the प्रत्यक्ष of external objects. Hence उद्भूतरूपवत्त्व is an उपाधि for बहिर्द्रव्यप्रत्यक्षत्व only, that is, प्रत्यक्षत्व as limited by a property (बहिर्द्रव्यत्व) residing in the पक्ष, viz. वायु.

The third is still more complex. In the instance ध्वंसो निर्दिष्टो जन्यत्वात्, भावत्व is the उपाधि because the व्याप्ति यवजन्यं तत्तद्दिनाशि is true of भाव things only, and requires

to be limited by the qualification भावत्वे सति. भावत्व is a necessary condition for a thing being अनित्य, only when the thing is a product, since प्रागभाव though not a भाववस्तु is both अजन्य and अनित्य. भावत्व is therefore the उपाधि of the अनित्यत्व of products, not of non-products, that is, it is जन्यत्वावच्छिन्नानित्यत्वव्यापक. But in the above instance जन्यत्व being the साधन, and अनित्यत्व the साध्य, भावत्व is साधनावच्छिन्नसाध्यव्यापक. *Nilakanṭha* here reads प्रागभावो विनाशी जन्यत्वात्, thus making प्रागभाव instead of ध्वंस the पक्ष of the syllogism and adds the remark अत्र जन्यत्वं पक्षधर्मो न संभवतीति साधनावच्छिन्नसाध्यव्यापकत्वघटितलक्षणम्. But this appears to be wrong, for the syllogism, as put by *Nilakanṭha*, will be an instance of स्वरूपासिद्ध where हेतु does not exist on the पक्ष, and not of सोपाधिक or व्याप्यत्वासिद्ध. The appended comment is also incorrect, because the उपाधि here is साधनावच्छिन्नसाध्यव्यापक not because जन्यत्व is not a पक्षधर्म, but because the उपाधि itself cannot be a पक्षधर्म. Another instance of this kind of उपाधि is गर्भस्थो मित्रातनयः इयामः, मित्रातनयत्वात्, मित्रातनयवत् 'the unborn son of the woman named *Mitrā* is dark-coloured, because he is a son of *Mitrā* like his elder brothers. Here शाकपाकजत्व is an उपाधि because the dark colour is found only in those sons of *Mitrā* who were born when their mother had eaten only vegetables and not ghee. Other sons of *Mitrā* born after eating ghee are not dark-coloured, while eating of vegetables is not known to produce dark colour anywhere except in *Mitrā*'s sons.

The fourth kind of उपाधि is प्रागभावो विनाशी प्रमेयत्वात्, where भावत्व is उपाधि because only those knowable things that are भावरूप (and not अत्यन्ताभाव) are destructible. But again भावत्व is a condition for अनित्यत्व only when the thing is a product; that is, it is the उपाधि of जन्यत्वावच्छिन्नानित्यत्व, where जन्यत्व being neither the साधन nor a पक्षधर्म is an उदासीनधर्म. Hence in this case the उपाधि is उदासीनधर्मावच्छिन्न.¹

1 For a fuller explanation of the doctrine of उपाधि see B. P. 137-8 and S. M., loc. cit. Calc. ed. pp. 123-5. See also Appendix to this edition.

SECT. LVII. बाधितः.

A reason is false where the negation of the thing to be proved is established by another proof, e. g. fire is cold as it is substance. Here coldness is the thing to be proved, and its negation is hotness which is cognized by touch-perception. Hence the reason is futile.

1. The special characteristic of बाधित has been already explained in distinguishing it from सत्यतिपक्ष.¹ Absurd or Contradicted reason. Annambhatta defines it as 'a हेतु designed to prove a साध्य, the negation of which is ascertained by another and presumably a more authoritative proof;' for if the other proof is not stronger, it will not prevail and the first हेतु will not be बाधित or contradicted. Annambhatta's definition of बाधित is in conformity with the opinion of the ancient school that the knowledge of the साध्याभाव obtained by the other proof must be a certain and right knowledge (प्रमात्मक.) Raghunātha Śrīromaṇi and other moderns, however, think that it need not be प्रमात्मक. Gaṅgeśa's definition प्रमितसाध्याभाववत्पक्षको बाधितः, (of which Annambhatta's definition is only a paraphrase, is simple and tolerably correct; but it requires one important qualification, viz. अनवच्छिन्न, in order to prevent it from applying in the case of an अव्याप्यवृत्ति धर्म. Thus when we say कपिसंयोगवानयं वृक्षः, the same पक्ष वृक्ष will have the साध्य i. e. संयोग in one part (शाखावच्छेदेन), and संयोगाभाव in another part (मूलावच्छेदेन); and yet the inference will not be बाधित. It is therefore declared that in बाधित the ascertainment of साध्याभाव must be with respect to the whole पक्ष, and not a part of it only. The complete definition therefore is पक्षनिष्ठानवच्छिन्नसाध्याभाववान्. The varieties of this बाधित are enumerated, according as the thing apprehended by the other proof is पक्ष, or साध्य-प्रतियोगि, or हेतु, and according as the other proof is प्रत्यक्ष अनुमान, उपमान, or शब्द.²

1 See Note under Sec. 54 p. 307 *Supra*.

2 Bhīmācārya : *Nyāya-kōṣa* 2nd ed. p. 554.

2. It may be remarked by the by that there exists much confusion as to the correct reading of *Correct reading.* *स्पर्शनप्रत्यक्षेण*, among different copies and commentators, probably owing to the doubt whether there can be a *स्पर्शनप्रत्यक्ष* of *उष्णत्व*; but there ought to be no reasonable doubt on the point after what has been already said as to the perception of qualities.¹

3. The five "fallacious reasons" having been explained, we may now take a brief survey of all of them together, in order to understand, if possible, what general principle underlies the classification given in the text and with what limitations it is to be accepted. In the first place, even a cursory glance will show that the five *हेत्वाभास*s do not exhaust all the kinds of fallacies that are liable to be committed in the course of reasoning. They are professedly *हेत्वाभास*s only, that is, fallacies of the *हेतु* or *middle term* of the syllogism. But our daily experience shows that the other terms, the *major* and the *minor*, are equally capable of hiding fallacies of their own, even though the *middle* be faultless. The two *Illicit Processes* of *major* and *minor* in English logic are distinctly fallacies of this latter kind. Again there are other fallacies which are as it were extra-logical, and which cannot be said to belong to particular terms, either because a premise is false in fact though correct in form as in a *Petitio Principii*, or because the argument is totally irrelevant, as in an *Ignoratio Elenchi*. What place is provided for these in Sanskrit logic? Or is it that they were not regarded as fallacies in India? The latter case is certainly not possible, for an argument once invalid is invalid wherever you go. So that either these fallacies must be included in some one or other of the five classes of *हेत्वाभास* mentioned above, or there must be a separate group or groups of fallacies not alluded to by *Annambhatta*. A perusal of the standard works on *Nyāya* shows that both surmises are partially true. Like the *हेत्वाभास*s some writers treat of other kinds of *आभास*s also, such as a *पक्षाभास* and a *दृष्टान्ताभास*, which are as much fallacies as the *हेत्वाभास*s and many of which have their exact equivalents in English

² See Note 2 under Sec. 43 p. 222 *Supra*.

logic. And that is just as it should be, for if the हेतु is liable to be mis-conceived and mis-stated, so are the पक्ष, the साध्य and the दृष्टान्त. Many of these आभास and especially those of दृष्टान्त are enumerated in old works.¹ Again Gotama mentions numerous fallacies of argument under the two heads of जाति and निग्रहस्थान, of which the हेत्वाभास form only a sub-division. Apart from these there are found in practice many complex cases of bad reasoning such as अन्योन्याश्रय, अनवस्था and चक्रक. Strictly speaking therefore the so-called हेत्वाभास mentioned in Nyāya manuals form only a part of the possible fallacies.

4. A little consideration however will show that all the varieties of आभास can be reduced to a हेत्वाभास. A fallacy, in whatever part of the syllogism it may lie, can by stating the syllogism in a logical form be reduced to some improper use of the *middle term* in one or both the premises. The *middle term*, being the link which connects the subject and the predicate of the conclusion, determines in fact the character of the whole syllogism; and so if the latter is invalid the invalidity must in one way or another arise from some defect in the connecting link. Not that other parts of the syllogism may not be faulty, but the faults can, by re-stating the syllogism in a suitable form, be transferred to the *middle term*. This is rendered much easier in the Sanskrit syllogism than in the English, owing to the peculiar form of the former. The chief thing required for a valid अनुमिति in Sanskrit is a correct परामर्श; and a परामर्श, which is composed of three constituent elements, पक्षता, पक्षधर्मता and व्याप्ति, is correct only when its three components are faultless. Hence all the faults of a syllogism must belong to some one of these three things. When the fault lies in the पक्षधर्मता or हेतुता, it is of course a हेत्वाभास proper. The fault lies in पक्षता only when the पक्ष or minor term is a totally unreal thing, such as गगनारविन्द, or when it is a thing on which the हेतु does not reside. Either way the हेतु or middle term cannot be predicated of the minor, and the two cases fall under आश्रयसिद्ध and स्वरूपासिद्ध respectively.

¹ See for instances of these Nyāya-Bindu-Tikā, Bibl. Ind p. 91 et. seq.

A third case occurs in English logic, namely that of *Illicit Process of minor* in which the term is undistributed in the premise, though distributed in the conclusion. But this case is not possible in the Sanskrit syllogism, because there, as has been already pointed out,¹ the पक्ष or *minor* term is always universal. The minor premise, *i. e.* the हेतुवाक्य, being always in the universal affirmative, the minor term is never undistributed in the premise. Lastly when the fault lies in the व्याप्ति, it can always be traced to a व्यभिचरित or a सोपाधिक हेतु.

5. Leaving aside all material or non-Logical fallacies which are ultimately reducible to some fault in the व्याप्ति, the strictly Logical or formal fallacies recognized by European logicians fall under four heads, 1. *Undistributed middle*, 2. the two *Illicit Processes* (of *major* and *minor*), 3. Negative premises for affirmative conclusion and *vice versa*, and 4. four or more terms.² Now the first of these expressly pertains to the middle term, while the *Illicit Processes* have been shown to be impossible in Sanskrit. The *Illicit major* is impossible, because if the *major* term is to be distributed in the conclusion, the conclusion must be negative; but a negative conclusion is inadmissible in *Nyāya logic*. An *Illicit minor* would require an undistributed *minor* term in the premise which is also impossible in Sanskrit. The other two kinds are resolvable into *Ambiguous Middle*. All the semi-logical fallacies also come under *Ambiguous Middle*. So all possible fallacies are reduced to three classes, non-logical fallacies coming under व्याप्तिदोष, the *Undistributed Middle* and the *Ambiguous Middle*. Of these the *Undistributed Middle* is not possible in Sanskrit, as the व्याप्तिवाक्य which corresponds to the *major* premise is always in the form of a universal proposition, and must have a universal middle for its subject. But more of this later. The *Ambiguous Middle* is nothing more than an असिद्ध or अप्रसिद्ध हेतु. Thus we see that all fallacies are ultimately reducible to some defect in the हेतु or middle term. The same can be

¹ See Note on p. 274, *Supra*.

² Whately : *Elements of Logic*, Bk. III, § 2.

shown to hold good in the English syllogism if all the moods are reduced to the only valid and proper mood, *Barbara*.

6. Now let us consider the fallacies mentioned in the older works on *Nyāya*, which do not apparently belong to the हेतु. The twenty-four जाति mentioned by *Gotama*¹ are nothing more than arguments based on false analogy or false distinction, and can be easily reduced to हेत्वाभास. Of the twenty-two निग्रहस्थान or points where an adversary can be caught or defeated, some like अर्थान्तर, पुनरुक्त and निरर्थक are merely tricks usually resorted to by a disputant in order to confound his rival, and which his rival is therefore taught to expose at once. Others like अविज्ञातार्थ, अननुभाषण, अप्रतिभा and पर्यनुयोज्योपेक्षण are only possible in long-continued controversies, and have nothing to do with the syllogism. They are dialectical lapses rather than fallacies of a particular argument, and belong therefore to the province of Rhetoric, not Logic. Only seven of these twenty-two 'catching points' viz. प्रतिज्ञाहानि, प्रतिज्ञान्तर, प्रतिज्ञाविरोध, प्रतिज्ञासंन्यास, हेत्वन्तर, अपसिद्धान्त and हेत्वाभास, can have any pretensions to be called logical fallacies. Of these the first four and the last but one are manifestly cases where the disputant is inconsistent with himself, and his conclusion does not therefore follow from his premises. हेत्वन्तर occurs where he employs one हेतु in हेतुवाक्य and another in the व्याप्ति. All these are cases of व्यभिचरित हेतु. The fallacies proper are therefore included in the last निग्रहस्थान, named हेत्वाभास. Similarly it can be shown that there can be no पक्षाभास or व्याप्त्याभास or दृष्टान्ताभास apart from the हेत्वाभास. पक्षाभास or a misleading minor falls under आश्रयासिद्ध. व्याप्त्याभास or false generalization is nothing but a व्यभिचरित or असिद्ध व्याप्ति, and is included in अनेकान्तिक or व्याप्यत्वासिद्ध हेत्वाभास. दृष्टान्ताभास also falls under the same, as it is not a दोष in itself, but acts by vitiating the व्याप्ति. If we say नित्यः शब्दोऽमूर्तत्वात् घटवत्, the example घट is a दृष्टान्ताभास, because neither साध्य nor साधन exists on घट. Again, if we say रागादिमानसं पुरुषे मरणधर्मत्वाद्रथ्यापुरुषवत्, the रथ्यापुरुष is a दृष्टान्ताभास because रागादिमत्त्व being doubtful in the man pass-

ing in the street, the दृष्टान्त is not निश्चितसाध्यवान्. All such cases of false or doubtful instances give rise to व्यभिचरितव्याप्ति and go under अनेकान्तिक or असिद्ध. There are some miscellaneous fallacies such as साधनाप्रसिद्धि, साध्याप्रसिद्धि etc. which are असिद्ध हेतुs under different names. Lastly the complex fallacies known as अन्योन्याश्रय, अनवस्था, and चक्रक are only series of two or more invalid syllogisms. In this way the five हेत्वाभासs named in the text can be shown to include all the possible cases of fallacious arguments.

7. The narrowing down of the circle of fallacies to the single head of हेतुदोष has the great advantage of facilitating their detection. In the

The advantage of the five-fold classification.

English syllogism you have first to examine all the three terms separately, then the

form of each premise, and then the material truth of the major premise. In Sanskrit you have only to look to a single term, namely the हेतु, and see whether it possesses all the five requisites of a good हेतु. If it lacks any one of them you can at once pronounce that the argument is invalid. Then find out which requisite is wanting. If पक्षधर्मत्व is absent, the fallacy is either आश्रयासिद्ध or स्वरूपासिद्ध. If सपक्षसत्त्व is wanting, it is असाधारण or अनुपसंहारि. If विपक्षव्यावृत्ति is not found, it is साधारणानैकान्तिक or व्याप्यत्वासिद्ध. In विरुद्ध the व्याप्ति is just the opposite of that assumed, and hence you will find both सपक्षसत्त्व and विपक्षव्यावृत्ति not only absent, but actually reversed, that is, you will find सपक्षव्यावृत्ति and विपक्षसत्त्व. The last two हेत्वाभासs are only special cases of false or imperfect generalization. Of these varieties the two that are most insidious and occur most frequently in practice are साधारण and व्याप्यत्वासिद्ध; and as these are caused by incorrect generalization, you have only to state the व्याप्ति in the form already provided यद्यत् तत्तत् or यत्र यत्र—तत्र तत्र and then see whether the व्याप्ति as stated is warranted by experience. If it is not, it is व्यभिचरित and the syllogism is invalid. In the Aristotelian syllogism the multiplication of figures and moods only breeds confusion and makes the detection of fallacies often difficult. The Naiyāyikas, profiting by the vast resources of the Sanskrit language, have considerably minimized this difficulty by providing a single form of syllogism which is both the simplest and the most elas-

tic at the same time. It is capable of conveying even the most complex ideas in the fewest words possible. For example nothing is more difficult in English than to *obvert* a proposition, that is, to change an affirmative into negative and *vice versa*; and yet in Sanskrit you can do this at once by simply adding अभाव to the word. This has enabled the *Naiyāyikas* to dispense with all negative moods and thus reduce the syllogism to the single form *Barbara*.¹ They have thereby avoided all fallacies arising from non-distribution of terms. In this way they have narrowed the circle of *formal* fallacies to the single case of 'ambiguous middle,' and reduced all *material* fallacies to a व्यभिचरित or असिद्ध व्याप्ति.

8. It is a useful exercise to convert the Aristotelian and the Sanskrit syllogisms into each other. They have each its special characteristics, and allowance must be made for them before an English syllogism is converted into Sanskrit or *vice versa*. The principal rule of conversion is, "Always reduce an English syllogism to the form *Barbara* before converting it into Sanskrit, and conversely when a Sanskrit न्याय is to be put into an English garb, make such modifications as are necessary to put it in the most natural form sanctioned by the rules of English logic." In a valid argument the rule may be sometimes ignored without much inconvenience, but when the argument is fallacious, its neglect is likely to mislead the student by making the detection of fallacies difficult. The most striking difference between English and Sanskrit logic is the absence in the latter of any distinction corresponding to the *formal* and *material* fallacies, or as Aristotle termed them, fallacies *in dictione* (in form) and those *extra dictionem* (outside form). The reason of this has been already explained. The form of the Sanskrit syllogism is so strict and circumscribed that an argument put into it is at once reduced to a mere mathematical equation. The chance of any fallacy lurking in words is therefore reduced to a minimum. What divides the *formal* fallacies into two groups, one of

¹ Vide Note p. 274, *Supra*.

purely logical, comprising the two *Illicit processes* and the *Undistributed middle*, and the other of *Ambiguous middle*, called semi-logical. We have seen that fallacies of the first group are totally absent in Sanskrit since they are strictly formal. The *semi-formal* or semi-logical fallacy of ambiguous middle is found, exactly because it is partly material; and even that, when stated in Sanskrit, assumes the character of a material fallacy, namely सोपाधिकहेतु. The ambiguity of the middle term becomes the उपाधि in Sanskrit, and when once that उपाधि is ascertained, we immediately know that the व्याप्ति is व्याभिचरित, which is a material fallacy. Not that no *formal* fallacies are possible in Sanskrit. There are some of them of the kind known in English as the fallacy of four terms or paronymous terms; but when analysed they are reduced to either स्वरूपासिद्ध or व्याप्यत्वासिद्ध.

9. Now we shall illustrate our remarks by a few examples:—

I. Take, an *Illicit Process of Major* :

Examples of English syllogisms.

Whatever is universally believed is true ;
God's existence is not universally believed ;

∴ It is not true.

Or stated more simply :—

All universally-believed things are true ;
God's existence is not a universally-believed thing;
∴ God's existence is not true.

This is an invalid mood (A E E) of the first figure and the major term 'true' is distributed in the conclusion but undistributed in the premise. As we must have all affirmative propositions in Sanskrit, obvert the minor premise and the conclusion in the above ; so we have :—

All universally believed things are true ;
God's existence is a not-universally-believed thing
∴ God's existence is a not-true (untrue) thing.

Translated into Sanskrit this will run :—

ईश्वरसत्त्वमप्रमाणम् ।

असर्वपरिगृहीतत्वात् or सर्वपरिगृहीतत्वाभावात् ।

यत्र यत्र सर्वपरिगृहीतत्वं तत्र प्रमाणत्वम् यथा घटादौ ।

Here it will be seen that the *v्याप्ति* is not proper because the two terms in it do not correspond to हेतु and साध्य. But the general proposition is true; hence its correct व्यतिरेक will be यत्र यत्राप्रमाणत्वं तत्र तत्र सर्वपरिगृहीतत्वाभावः; that is, प्रमाणत्व which is the साध्य in the syllogism here is सर्वपरिगृहीतत्वाभावव्याप्य i. e. साधनव्याप्य. Thus the हेतु in this syllogism is the व्यापक of साध्य and not साध्यव्याप्य, as it always is in a valid syllogism; hence it is सोपाधिक or व्याप्यत्वासिद्ध. Or after translating the syllogism into Sanskrit, we may supply a *v्याप्ति* of our own that will suit it, namely यत्र यत्र सर्वपरिगृहीतत्वाभावस्तत्राप्रमाणत्वम् यथा शुक्तिरजते. Here if we had any विपक्षदृष्टान्त where the हेतु (असर्वपरिगृहीतत्व) co-existed for certain with the साध्याभाव (प्रमाणत्व), the fallacy would have been साधारण. Now the व्यतिरेक of this latter *v्याप्ति* is यत्र यत्र प्रमाणत्वं तत्र सर्वपरिगृहीतत्वम्, which when retranslated into English becomes: "All true things are universally believed"; but this is not the true converse of the major premise already given, and hence it is false. Thus an *Illicit process of major* in English becomes व्याप्यत्वासिद्ध in Sanskrit; while a व्याप्यत्वासिद्ध, when converted into English will be either an *Illicit major* or a *material fallacy*, named by Whately the Fallacy of undue assumption.

II. Take now an example of an "ambiguous middle.

All angles of a triangle are equal to two right angles

A B C is an angle of a triangle;

∴ A B C is equal to two right angles.

This is called a Fallacy of Division and Composition, because the *middle term*, 'angles of a triangle' is taken collectively in the *major* and distributively in the *minor* premise.

In Sanskrit it will be :—

अयं कोणो द्विसमकोणसमः ।

त्रिकोणस्थितकोणत्वात् ।

ये ये त्रिकोणस्थिताः कोणास्ते द्विसमकोणसमाः ।

This is स्वरूपासिद्ध, and the fallacy at once appears by expressing the *v्याप्ति* correctly यत्र यत्र त्रिकोणस्थितकोणसमुदायत्वं द्विसमकोणसमत्वम्. The real साध्यव्याप्य हेतु is not 'कोण simply but 'कोणसमुदाय, which does not exist on the पक्ष; hence the हेतु is

स्वरूपासिद्ध. Or you can say that the real हेतु is त्रिकोणास्थितकोणान्यतरत्व, which is not साध्यव्याप्य; and then the fallacy will be असाधारण.

III. Take another example of an "ambiguous middle," called *Fallacia accidentis* or *Fallacia a dicto secundum quid ad dictum simpliciter* :—

What is bought in the market is eaten ;

Raw meat is bought in the market ;

∴ Raw meat is eaten.

Which converted into Sanskrit becomes :—

क्रयं भक्षणीयम् ।

आपणक्रीतत्वात् ।

यद्यदापणक्रीतं तत्तद्भक्षणीयम् ।

Here the हेतु is सौपाधिक and the व्याप्ति is incorrect because there is an implied *condition* भक्षणयोग्यत्वे सति. In the original, the *middle* term, 'a thing bought in the market' implies in the *major* premise "as to its substance only," in the *minor* "as to its condition and circumstances." It is therefore ambiguous.

IV. Take this argument in a circle:—

Every rule has exceptions ;

This is a rule ;

∴ This rule (viz. that every rule has exceptions) has exceptions.

∴ Some rules have no exceptions.

In Sanskrit it will be:—

‘ नियममात्रं व्याभिचरतीति नियमो व्यभिचारी ।

नियमत्वात् ।

यत्र यत्र नियमत्वं तत्र तत्र व्यभिचारित्वम् ।

This is साधारण because there is no विपक्षदृष्टान्त on which both साध्य and साधन are known to be absent.

V. Take another case of an *Ambiguous middle*.

Water is liquid ;

Ice is water ;

∴ Ice is liquid.

This is equal to :--

हिमं द्रवरूपम् ।

जलीयत्वात् ।

यद्यजलीयं तद्द्रवरूपं यथा सरित्समुद्रादि ।

This is also साधारण, for we know that जलीयत्व resides on the विपक्ष करकादि where there is no द्रवत्व.

VI. Take this syllogism in the third figure :--

All books are liable to err ;

All books are human productions ;

∴ All human productions are liable to err.

Here the conclusion is right but it does not follow from the premises, the only legitimate conclusion from them being 'Some human productions etc.,' when it will be *Darapti* in the Third Figure. The fallacy is *Illicit Minor*. Translated into Sanskrit, the above syllogism will be :--

मानवकृतिमात्रं प्रमादार्हम् ।

पुस्तकत्वात् ।

यत्र यत्र पुस्तकत्वं तत्र तत्र प्रमादार्हत्वम् ।

This is clearly भागासिद्ध.

VII. Lastly take this stock instance of *Undistributed Middle* :--

All is not gold that glitters ;

Glass glitters ;

∴ Glass is not gold.

= Some things that glitter are not gold ;

Glass is a thing that glitters :

∴ Glass is not gold.

= काचो न सुवर्णम् ।

तेजस्वित्वात् ।

यत्र यत्र तेजस्वित्वं तत्र तत्र सुवर्णत्वाभावः यथा हीरके ।

Here the व्याप्ति is व्यभिचरित, because there is no विपक्षदृष्टान्त on which तेजस्वित्व is absent, and hence the fallacy is साधारण.

10. To convert a Sanskrit syllogism into English is much easier because there you have the argument already put into a syllogistic form.

Examples of Sanskrit Syllogism.

I. Thus take for example :—

यागीया हिंसाधर्मस्य जनिका ।

हिंसात्वात् ।

या या हिंसा साधर्मस्य जनिका ।

This is सोपाधिक with निषिद्धत्व as उपाधि, and will become in English :—

Animal-killing is sinful ;

A sacrifice is killing of an animal ;

∴ A sacrifice is sinful.

Here if you insert ' all ' before the subject in the *major* premise, it becomes false, and the fallacy is that of undue assumption ; or the word ' killing ' may be said to be used in two different senses in the *major* and *minor* premises, when it is 'ambiguous middle ' or 'the fallacy of four terms.' If you do not insert ' all ' in the *major* premise, then it is a fallacy of *Undistributed middle*.

II. Or take an असाधारण-सव्यभिचार :—

जीवच्छरीरं व्यापारवत् ।

प्राणादिमत्त्वात् ।

यद्यत् प्राणादिमत्तद्व्यापारवत् ।

Which in English is equal to :—

All living things have motion ;

Our body is a living thing ;

∴ Our body has motion.

Here the *major* term is not distributed in the premise and hence the fallacy is an *Illicit process of major*. The illustrations given in this as well as in the last preceding note will show that no hard and fast rule can be laid down as to the correspondence of any हेत्वाभास with any particular English fallacy or *vice versa*. It is the mode of conversion that determines them, and cases often occur in which the same हेत्वाभास when converted differently gives different fallacies.

SECT. LVIII. उपमानम्.

Comparison is the immediate Cause of Analogy. Analogy is the knowledge of the connection of a name with the object denoted by it. The knowledge of similarity is its proximate Cause. The recollection of an authoritative direction is the intermediate operation.

1. (The third kind of proof is *Comparison* which is 'the immediate cause of the apprehension (अनुभव) known as *Analogy*.' *Analogy* is defined as 'the knowledge of the relation existing between a name (संज्ञा-गवयपदं) and the thing denoted by it (संज्ञी-गवयपदवाच्यः). The immediate cause of this is the knowledge of the similarity of गवय with गो, which is therefore called उपमान. The process of acquiring this उपमिति may be described thus : A man who has never seen a *gayal*, nor knows what it is like, is told by some forester (who being daily familiar with *gayals* is आप्त 'worthy to be believed') that a *gayal* (*Bos Gaveas*) is like a cow. He then goes to a forest and there sees a strange animal unknown to him before. He then perceives in that animal some resemblance to the cow which of course he knows full well. The perception of this similarity with the cow reminds him of the former direction (अतिदेशवाक्य) of the forester that a *gayal* is like a cow. Then, combining this reminiscence with his actual perceptive knowledge of similarity between the cow and the new animal, he at last concludes that the animal which he sees before him as a *gayal*. This last cognition namely "This is a *gayal* " is the उपमिति, for it is a knowledge of the denotative relation of the word *gayal* with the object perceived. " This is a *gayal* (अयं गवयः) " means " This object bears the name, or is denoted by the name *gayal* (अयं गवयपदवाच्यः), " that is, there exists between this object and the word *gayal* the relation of denotation (वाच्य-वाचकभाव). This relation is the संज्ञासंज्ञिसंबंध, and the knowledge of it is उपमिति. Two previous cognitions are required to produce this उपमिति, namely, the verbal knowledge of the forester's direction (अतिदेशवाक्यार्थज्ञान) and the actual perception of the resemblance to the cow that was existing in the animal *gayal*.)

2. Both these previous cognitions are indispensable to a valid analogy ; but the question still remains which of these is the करण of उपमिति, and which is सहकारि, that is, which is

The proximate cause of Upamiti.

more immediate, and which is only accessory. The ancient and the modern schools of *Naiyāyikas* are diametrically opposed on this point : the former, *i. e.* the ancients, regard अतिदेशवाक्यार्थज्ञान as the करण and सादृश्यज्ञान as सहकारि, while the moderns prefer just the opposite view. The recollection of the अतिदेशवाक्यार्थ is of course the व्यापार according to both. *Annambhaṭṭa* here evidently accepts the view of the moderns, for he expressly says that the सादृश्यज्ञान, *i. e.* the गवयनिष्ठ-गोसादृश्यप्रत्यक्ष, is the करण of उपमिति. He does not however seem to follow the moderns in taking the exact form of the उपमिति to be गवयो गवयपदवाच्यः, and not अयं or असौ गवयपदवाच्यः, the difference between the two being that the second cognition would inform him that the particular object alone is denoted by *gayal*, while the first conveys that the whole class of which that object is an individual is denoted by the name *gayal*. *Viśvanātha*, who is a modern *in toto*, says न त्वयं गवयपदवाच्य इत्युपमितिः । गवयान्तरे शक्तिग्रहाभावप्रसङ्गात्.¹ Although the करण of उपमिति is declared to be the सादृश्यज्ञान, it is not the sole करण, for an उपमिति may arise even from a knowledge of dissimilarity or a mere peculiarity. Hence S. C. divides उपमान (उपमतिकरण) into three kinds : तच्चोपमानं त्रिविधम् । सादृश्यविशिष्टपिण्डज्ञानं असाधारणधर्म-विशिष्टपिण्डज्ञानं वैधर्म्यविशिष्टपिण्डज्ञानं च. ' उपमान is of three kinds, viz the knowledge of an animal possessing (1) a similarity, (2) a peculiar property or (3) a dissimilarity. ' गोसदृशो गवयः is an example of the first kind ; that of the second is नासिकालसदेकशृङ्गः खड्गसृगः (a rhinoceros has one horn adorning its nose) ; the example of a dissimilarity would be उष्ट्रो नाश्वादिवत्समानपृष्ठद्वस्वग्रीवशरीरः (a camel does not possess a level back and a short neck like a horse). The word सादृश्य in the text is therefore to be taken as illustrative (उपलक्षण) of the other two.

3. In accepting उपमान and शब्द as independent proofs *Annambhatta* follows *Gotama*. The *Vaiśeṣikas* as well as the *Sāṃkhyas* do not accept उपमान as a separate proof. They include it under अनुमान. *Vācaspati* explains this view thus : गवयशब्दो गोसदृशस्य वाचक इति प्रत्ययः सोऽप्यनुमानमेव । यो हि शब्दो यत्र वृद्धैः प्रयुज्यते सोऽसति वृत्त्यन्तरे तस्य वाचकः । यथा गोशब्दो गोत्वस्य । प्रयुज्यते चैवं गवयशब्दो गोसदृश इति तस्यैव वाचक इति तज्ज्ञानमनुमानमेव ।¹

The *Naiyāyika's* reply to this argument may be given in *Nilakanṭha's* words :- वैशेषिकास्तु पदवाच्यत्वव्याप्यसादृश्यादिपरामर्शात्पदवाच्यत्वस्यानुमितिरेवातो नोपमानं प्रमाणान्तरमित्याहुः । तच्चिन्त्यं व्याप्तिज्ञानमन्तरेणापि पदवाच्यत्वप्रामितिरनुभवसिद्धत्वात्. The अनुमान as framed by the *Vaiśeṣikas* would be अयं पिण्डो गवयपदवाच्यः । गोसादृश्यात् । यत्र यत्र गोसादृश्यं तत्र गवयपदवाच्यत्वम्. But our daily experience tells us that such a व्याप्ति is not necessarily true nor is it essential for the knowledge that a certain word denotes a certain object. Hence उपमान is different from अनुमान. The fact is that the concepts derived from analogy are generally approximate or tentative only, not positive like those of perception or inference. They are very useful in practical life, and a distinct proof must be assumed to account for them. (*Udayanācārya* from whom *Annambhatta* has borrowed his definition of उपमिति has made this clear in the following verse in *Kusumāñjali*:-

संबन्धस्य परिच्छेदः संज्ञायाः संज्ञिना सह ।

प्रत्यक्षादेरसाध्यत्वादुपमानफलं विदुः ॥²

The certain knowledge (परिच्छेद) of संज्ञासंज्ञिसंबन्ध is regarded as the result of an independent proof उपमान, because it cannot be obtained by any other known proof such as Perception.

SECT. LIX. शब्दः.

Word is a sentence spoken by an authority. Authority is a person who speaks truth. Sentence is a group of words, e. g. bring a cow. Word is a thing having power (of conveying meaning). Power is a convention made by God that a certain sense be understood from a certain word.

¹ *Sāṃkhya-Tat. K.* p. 278.

² *Kus. Cowell's Ed.* III, 8. and 31.

1. The author now proceeds to the fourth proof, *Word*.

It is defined as "the sentence or proposition of (uttered by) a credible or authoritative person." An 'authoritative person' (आप्त) again is "he who speaks the truth." Truth (यथार्थ = यथाभूतोऽर्थः) is "an object as it exists in reality." The *verbal knowledge* (शाब्दबोध) of truth is the representation of a thing just as it exists. A *proposition* (शब्द) which conveys such true *verbal knowledge* is यथार्थवचन, and he who asserts such a proposition is यथार्थ-वक्ता or आप्त. V. V. therefore defines an आप्त as प्रकृतवाक्यार्थ-विषयकयथार्थशाब्दबोधविषयकतात्पर्यवान्, 'he who conveys a meaning (तात्पर्य), that is the subject of a true *verbal knowledge* concerning the sense of the sentence uttered'; that is, a person is आप्त when the words spoken by him convey यथार्थशाब्दबोध, and a शाब्दबोध is यथार्थ when it accords completely with the external reality of things. These definitions of आप्त and यथार्थ are very characteristic because they clearly show that according to *Naiyāyikas* the ultimate test of the truth of *verbal knowledge* was not the authority attaching to the speaker himself, but the fact of his words being in harmony with the reality of things. Having defined an आप्त, the author defines a वाक्य as "a collocation of words such as 'Bring a cow, ' " while a word is "that which possesses the power (शक्ति) of conveying a meaning."

2. These definitions of a वाक्य and a पद are very impor-

*The Nyāya and
Mīmāṃsā theories
of verbal knowledge.*

tant, because they embody a particular theory of शाब्दबोध which distinguishes the *Naiyāyikas* from other schools, and which has become the subject of several interminable controversies. The *Naiyāyikas* are on this point particularly opposed to the *Mīmāṃsakas* who hold the doctrine of पदानामन्वयविशिष्टे शक्तिः, while the *Naiyāyikas* maintain the contrary view, पदानामन्वय एव शक्तिः.

3. The *Mīmāṃsā* theory of the import of propositions is

*The two theories
contrasted.*

rather complicated. Along with the grammarians they hold that the verb is the principal word in a proposition (आख्यातप्रधानं वाक्यं), because it is the verb that forms the copula as it were to connect a number of words into a sentence. If one only says

देवदत्तः ग्रामम्, we can make nothing out of those disconnected words ; but as soon as the verb गच्छति is added, the whole forms a connected proposition conveying the idea of Deva-datta's motion to the town. The idea of motion is the chief significance of the sentence, the word देवदत्त and ग्राम simply serving to specify and define as it were that motion. गच्छति denotes 'motion' in general ; the addition of देवदत्त limits the sense to the motion of a particular individual, while the further addition of ग्राम still more restricts this limited motion of an individual to one in a particular direction and towards a particular place. The whole sentence thus means देवदत्तकर्तृक—ग्रामकर्मक—गमनक्रिया, in which क्रिया is the विशेष्य while the other two expressions simply act as limiting qualifications. All the words of a sentence are interdependent, because the predicate is too vague and general to convey any sense unless otherwise determined, while the substantives and other words are nearly subordinate members of the sentence. By themselves the words of a sentence import nothing, but placed in the sentence they denote the क्रिया as happening in a particular thing. Thus घट alone signifies nothing, but when we join घटम् with आनय, we at once know it to be आनयनक्रियानिरूपितकर्मव्यक्ति, that is, we know घट not independently, but only as standing in some relation to the action of 'bringing.' When each word is thus apprehended, as related in some way to the क्रिया, we get the meaning of the whole sentence in the form of that क्रिया as conditioned and particularized by the several substantives. This doctrine is expressed by saying क्रियान्वित एव पदानां शक्तिः, or as *Annam-bhatta* puts it at the end of his commentary, इतराः (क्रिया-) न्विते शक्तिरिति प्राभाकराः.

4. The followers of *Gotama*, adds T. D., deny the necessity of thus apprehending each word separately before combining them in a sentence, when the meaning of the whole sentence can as well be conveyed at once in the form of the collective sense of all the words ; that is, according to *Naiyāyikas* the शक्ति resides in the अन्वय itself, and not in the अन्वितपदs. Single words, say they, like घट, पट etc., convey no sense, not because they are अनन्वित, but because the three requisites of शाब्दबोध, namely आकाङ्क्षा, संनिधि and योग्यता, are not satisfied. A proposition or sentence is nothing but a number of significant words (शक्तपद) which possess आकाङ्क्षा.

योग्यता and संनिधि; and the collective meaning of such words will be apprehended even though there be no क्रियावाचकपद in the sentence, e. g. काञ्च्यां त्रिभुवनतिलको भूपतिः, which designates a king in the town of Kāñchi without attributing any action to him. Similarly we say त्रयः कालाः, although no क्रियावाचकपद can be supplied there; for the only possible verbs applicable to त्रयः कालाः are सन्ति or (जीवेन) ज्ञायन्ते, but the first is inapplicable, as there is no specification in त्रयः कालाः of any particular time, past, present or future, while ज्ञायन्ते is inappropriate, because 'time' is unknowable by human beings. There can therefore be no क्रियान्वय in त्रयः कालाः and yet the words convey a sense because the above three requisites are satisfied. According to *Mīmāṃsakas* and grammarians a proposition is धात्वर्थमुख्यविशेष्यक, that is, चैत्रस्तण्डुलं पचति would be interpreted as चैत्रकर्तृक-तण्डुलकर्मक-पाकक्रिया. But the above example shows that this is not always possible; and therefore in such cases a proposition is प्रथमान्तार्थमुख्यविशेष्यक only, that is, the illustration would mean चैत्रनिष्ठकृति-जन्यपाकजन्य-फलशाली तण्डुलः. The consequence of this nice distinction is that according to *Mīmāṃsakas* a क्रियाबोधकवाक्य or विधिवाक्य is alone legitimate, while a सिद्धार्थबोधक वाक्य, which they call अर्थवाद, has no independent significance, and can exist only as a part of another क्रियाबोधक वाक्य. The *Naiyāyikas* of course consider both kinds of sentences equally significant and independent. Hence the definition of a वाक्य in the text is (शक्त) पदसमूहः, which implies, as V. V. says, that पदसमूहादेव शाब्दबोधो नैकस्मादिति भावः 'Verbal knowledge is obtained not from one word (such as a क्रियाबोधक) but from all the words together.'

5. On a proper analysis it will be found that a proposition consists of a subject, a predicate and a copula. The predicate is always resolvable into an attribute residing in the subject and the copula is the connecting link showing the relation that exists between the subject and the attribute predicated of it. Thus in the sentence "Man is mortal", the attribute of mortality is predicated of man, and the verb is the copula connecting the two. In मर्त्यत्ववान् मनुष्यः or गमनशीलो देवदत्तः we denote substantives possessing attributes. This view is very similar to the *Naiyāyika* doctrine.

6. From the import of proposition we pass on to the import of single words. A word is defined as a thing that is शक्त 'having power or significance.' But what is शक्ति? *Annambhatta* defines it as "the convention made by God that such and such a meaning should be understood from such and such a word". Some copies here read ईश्वरेच्छासंकेतः, but the word इच्छा is redundant as संकेत implies इच्छा. According to this definition language is the creation of God, and each word is capable of conveying a particular sense because God has so willed it. The definition is in accordance with the view of the ancients. The moderns say इच्छामात्रं शक्तिः meaning that even the will of man can give significance to words, as in proper names like चैत्र, मैत्र, डित्थ etc. The ancients do not deny the significance of these latter kind of words, but call them simply पारिभाषिक or conventional, while only those derived from God are शक्त in the proper sense of the term. But this is not quite satisfactory, for one might say that although the two kinds of words may be named separately, no difference is really observable in their power of denoting particular objects. देवदत्त denotes an individual exactly in the same way as घट denotes a jar although one word is of human and the other of divine origin. A later writer therefore defends the ancient view by attributing even पारिभाषिक words to divine origin. The author of *Tarka-Prakāśa* says " 'द्वादशेऽहनि पिता नाम कुर्यात्' इति श्रुतिः । तथा च, 'द्वादशाहः कालीनपित्रायुश्चरितनामत्वादिना नामवाच्यः शिशुः' इत्याकारकं च येश्वरेण तादृशश्रुतिप्रणयनादाधुनिकेऽपि नाम्नि ईश्वरसंकेतोऽस्त्येव." ¹ But this is going rather too far, or, as Sanskritists say, कुशकाशावलम्बन, supporting one absurdity by another. We know that new phraseology is invented by men in different countries to convey new ideas or denote new inventions and discoveries. Innumerable words unknown before are thus added to the language. The existence of many distinct and unconnected languages in the world is the strongest proof of the absurdity of the theory of a divine origin of any particular language.

7. It is probably to avoid this controversy that our author gives another and a better definition of शक्ति in the commentary, अर्थस्मृत्यनुकूलः पद-
^{Another defini-} ^{tion.} पदार्थसंबन्धः शक्तिः 'Power is the relation

1. *Bhīmāchārya : Nyaya-kosa*. 2nd ed. p. 782.

of a word and an object, that always serves to revive the memory of that object (whenever the word is spoken). ' This definition, says *Nilakanṭha*, is purposely made vague so as to apply to शक्ति, whether it is regarded as an independent पदार्थ as the *Mīmāṃsakas* do, or whether it is identified with the will that makes the convention, as the *Naiyāyikas* hold. The *Mīmāṃsaka's* arguments for regarding शक्ति as a separate पदार्थ are summed up in the couplet:—

न द्रव्यं गुणवृत्तित्वाद् गुणकर्मबहिःकृता ।

सामान्यादिषु सत्त्वेन सिद्धभावान्तरं हि सा ॥

Power is not a substance as qualities inhere (in them); it is also distinct from qualities and actions. It resides in genus and other categories. It must therefore be regarded as a separate category.

The *Naiyāyikas* however refuse to recognize शक्ति as a separate category on the ground that, as each substance e. g. पङ्कज, कुसुद etc. is the object of several शक्तिस, to accept the independent existence of them all would involve गौरव. शक्ति is therefore properly speaking only a *power* in a word to denote the meaning imposed upon it by divine or human will.

8. But the question still remains where this सकेतरूपा शक्ति is apprehended. In other words, what does a word like घट denote primarily : the object jar, or the common property jar-ness that resides in it, or both together? This is an important question as it lies at the basis of the several antagonistic theories of शाब्दबोध proposed by different schools. The opinions on this point are as various and numerous as opinions can possibly be on any single topic. Of these views four are the most important, namely केवलजाति, केवलव्यक्ति, जातिविशिष्टव्यक्ति and अपोह. The first is adopted by the *Mīmāṃsakas*, the second by modern *Naiyāyikas*, the third by ancient *Naiyāyikas*, and the last belongs to the *Bauddhas*.¹ The advocates of each of these views look at the significant word from different stand-points. When one says घटमानय, the speaker undoubtedly desires the thing, jar, and not the class-notion, jar-ness, to

Conflicting theories.

¹ Mammata : *Kavya-Prakāśa* Bom. Ed. Ch. II. p. 30.

be brought to him. That the व्यक्ति 'jar' must be somehow or other implied by the word घट is therefore necessary, for unless it is so implied the hearer can never fetch the object. Modern *Naiyāyikas* rely on this simple fact, and say that the word घट primarily denotes the घटव्यक्ति. The capacity of being the subject of any act (अर्थक्रियाकारत्वि) resides in the concrete object व्यक्ति alone, and hence it is the व्यक्ति on which the संकेत is made. But there are insuperable objections to this view. If घट denotes a particular घटव्यक्ति, we would require as many separate words as there are jars in the world and the संकेत on each would have to be learnt separately as they can have no connection with each other. As a matter of fact however there is only one word घट, and when we once know its *significance* as expressing a कम्बुग्रीवादिसद्वस्तु, we apply it to denote all objects having that shape. घट therefore denotes not a particular घटव्यक्ति, but the property कम्बुग्रीवादिसत्त्व. Further the word घट conveys many notions besides that of the व्यक्ति; it implies that the thing denoted belongs to a particular class of substances having some common properties, and it also distinguishes the व्यक्ति from other dissimilar substances. Thus the word घट performs three functions; it points out a particular object jar, it signifies that the particular jar is similar to all the jars in the world and it distinguishes that jar from all other things, such as stones, walls and trees. When we say गो we at once denote the गोव्यक्ति, the class-notion गोत्व, and the peculiarity सास्नादिमत्त्व which distinguishes a cow from other animals. In other words, गो signifies व्यक्ति, जाति and आकृति at the same time; or as a writer puts it, जातौ व्यक्तौ वैशिष्ट्ये च पदानां शक्तिः. This was the view of the ancient *Naiyāyikas*, and is apparently the one preferred by *Annambhatta*.

9. According to modern *Naiyāyikas* words denote the व्यक्ति only, and the attributes come in by implication; that is, words are primarily concrete names. But according to the जातिवादि *Mīmāṃsakas* words are purely abstract names denoting the जाति only. The ancient *Naiyāyikas* seem to have adopted a middle course between these extremes by holding that words denote neither केवलव्यक्ति nor केवलजाति but जातिविशिष्टव्यक्ति, that is, a particular object घट as possessing the class-notion घटत्व. The reason given by T. D. for rejecting the केवलजाति-

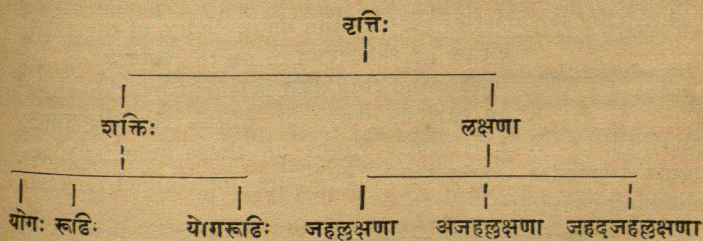
वाद is, that the actions of 'bringing' and 'binding', expressed in the propositions घटमानय and गौरनुबन्धः, are possible in the respective व्यक्ति only. If a word signified जाति only, the sentence would mean घटत्वमानय and गौत्वमनुबन्धम्, which is absurd because घटत्व and गौत्व cannot be separated from the concrete objects. The *Mīmāṃsakas* however maintain that the fact that घटत्व or गौत्व cannot be separated from the concrete object (अविनाभाव) is exactly the reason why the significance of the word घट or गो should, for the sake of लाघव, be confined to the जाति, while the notion of व्यक्ति must be conveyed by आक्षेप or necessary implication. This view of जातावेव शक्तिर्यक्तिलाभस्वाक्षेपात् was held by the *Mīmāṃsakas*, grammarians and rhetoricians, and is rejected by *Annambhaṭṭa*.

10. The last of the four views mentioned above which was held by the *Bauddhas* was that the primary import of words was only अपोह or अतद्द्वयावृत्ति, distinction of all other different objects from it. What do we understand, they argued, by a word such as घट? Not an external object, because we never really know external objects; nor the जाति, because जाति is nothing more than a mere conception formed by our mind and imposed upon what we call external objects. What घट then really signifies is that a certain thing possesses some peculiarities which distinguish it from all other things. We never know what घट or घटत्व is; we only know what it is *not*, viz. that it is not पट or कुड्य. We have therefore only a negative knowledge of things, and consequently the import of words must also be negative. The *Vedāntins* by way of harmonizing the above views, each of which expresses a part of the truth, have started the theory that the power of a word resides in both the जाति and the व्यक्ति, but in different ways: that is, it is active or expressive in जाति, and passive or latent in the व्यक्ति. The *Vedānta-Paribhāṣā* says, गवादिपदानां व्यक्तौ शक्तिः स्वरूपसती न तु ज्ञाता । जातौ तु सा ज्ञाता हेतुः.¹ This appears to mean that a word primarily signifies जाति, but its capability of signifying the class-notion is derived from its acknowledged connection with the concrete objects comprised in that class. Thus हस्तिन् signifies the general no-

tion of a trunked animal ; but it does so because the property 'trunk' was found in the actual object elephant.

11. It must have been noticed that the distinction between the denotation and the connotation of words insisted upon by Mill and other English logicians does not strictly speaking find a place in any of these views. But if we may use those terms as applying to the signification of व्यक्ति and जाति respectively, we might say that in केवलव्यक्तिवाद words are purely denotative, while in केवलजातिवाद they are purely connotative. Similarly in the जातिविशिष्टव्यक्तिवाद of the ancient *Naiyāyikas* they are both denotative and connotative, while in the theory of अपोह they connote only the *differentia*.

12. A पद is defined as शक्त, but शक्ति does not exhaust the whole import of words. Every word is capable of conveying two meanings, one primary or direct and the other secondary or implied. The relation by which a word signifies a particular thing is called वृत्ति, which is of two kinds, शक्ति or अभिधा (expression) and लक्षणा (implication). The first is created by संकेत and is inseparable from the word ; the second operates in the absence of the first, and, being derived from it, is entirely dependent on it. Hence the definition of a पद as शक्त is not अव्याप्त on a लाक्षणिकपद, for a पद can never be लाक्षणिक unless it is also शक्त. Each of these two kinds of वृत्ति or special relation is subdivided into three sorts, thus :—



13. The *expressive* power (शक्ति) of words is of the above three kinds ; and so words are divided into three classes according as they operate through any one of these modes. योग or

The expressive power.

etymology is defined अवयवशक्ति 'the power of the several roots or component parts of the words.' A यौगिक शब्द is therefore one which adheres to its etymological meaning and conveys nothing more nor less than what is implied in the parts, e. g. पाचक which, being compounded of the root पच् and the कर्तरिप्रत्यय, signifies पचनकर्ता. रूढि or customary significance is defined as समुदायशक्ति, the power of the whole word without any reference to its parts. Not that such रूढ words have no etymology, for there is an influential school of grammarians who assert that all words are derived from roots ; but these रूढ words have completely abandoned their original signification and acquired a new sense. Thus घट signifies 'jar' not because it is derived from घृ or any other root, but because convention has attached that meaning to it. Majority of simple words in Sanskrit belong to the third kind, namely, यौगिरूढ words in which both the etymological and the customary meanings are partly retained. Words like पङ्कज, मधुकर or हस्तिन् have no doubt an etymological sense, but it is restricted by custom to a particular object or kind of object comprised in the original meaning. Etymologically पङ्कज might mean any thing produced in mud, such as a lotus or a frog. But custom has narrowed the meaning of the word to a lotus. Similarly हस्तिन् has come to denote only one out of many animals having हस्त, such as elephants, men and monkeys. Some mention a fourth variety named यौगिकरूढ, such as उद्भिद्, which may be interpreted either by etymology or by customary sense independently.

14. All these varieties require the knoweledge of the संकेत, either on the अवयव or on the समुदाय or on both ; and this संकेत is learnt by the child in various ways of which the वृद्धव्यवहार described by T. D. is one. Eight of these generally recognized modes of learning शक्ति are mentioned in the following couplet:--

How Convention is known.

शक्तिग्रहो व्याकरणोपमानकोशाप्तवाक्याद्व्यवहारतश्च ।

वाक्यस्य शेषाद्विवृतेर्वदन्ति सांनिध्यतः सिद्धपदस्य वृद्धाः ॥

The import of words is learnt in any of the following ways : (1) Grammar, as the meaning of roots, terminations and cases ; (2) Comparison, as when the meaning of गवय

is known by the similarity of a *gayal* with a cow ; (3) Dictionary, as of synonyms स्वर्ग, नाक etc. ; (4) Express assertion of a credible person, as कोकिलः पिकपदवाच्यः ; (5) Usage of elders as when one elder person says to another ' Bring a cow, ' or ' Bring a jar, ' the child eliminates the common word ' bring ' and thus determines the meanings of गो and घट ; (6) Context, as in the vedic text यवमयश्चरुर्भवति, the exact meaning of यव is known by a concluding passage ; (7) Explanation by synonyms or paraphrase as घटः कलशः, पचतीति पाकं करोति; and lastly (8) Contiguity with a well-known word as in इह सहकारतरौ मधुरं पिको रौति, the meaning of पिक is known by its association with सहकार and मधुर. Some also add signs of hand etc. as the ninth, as when one points a finger to a woman and says to the child इयं ते माता, the gesture imparts to the child the knowledge of the word माता.

15. The other kind of वृत्ति is लक्षणा, *Implication*, which is defined as स्वशक्यसंबन्धः (स्वं लाक्षणिकं पदं तस्य शक्यः वाच्योऽर्थः तत्संयोगः) ' connection with the expressive sense of the word '. It is resorted to only when there is मुख्यार्थानुपपत्ति ' inapplicability of the primary sense in the context. ' In गङ्गायां घोषः for instance, the primary sense of गङ्गा, namely the stream, is inapplicable because a hut cannot stand on the current; and hence गङ्गा is made to signify the bank of the river which is connected with the current by संयोग. If *Annambhaṭṭa* accepted the views of the ancient *Naiyāyikas* about शक्ति, he follows the moderns with regard to लक्षणा. According to the ancients the essential condition for लक्षणा was अन्वयानुपपत्ति ' unsuitability of the अन्वय or meaning of the sentence ' ; but there is no such अन्वयानुपपत्ति in examples like ककेभ्यो दधि रक्षतां or यष्टीः प्रवेशय, which by themselves give a fair sense without any लक्षणा, although that sense is clearly not the one intended by the speaker. Hence T. D. says तात्पर्यानुपपत्तिर्लक्षणाबीजम्, लक्षणा is resorted to when the primary sense is unsuited, not to the वाक्यान्वय, but to the वस्तुतात्पर्य. The three-fold division of लक्षणा into जहत्स्वार्था, अजहत्स्वार्था and जहदजहत्स्वार्था is also taken from the moderns. जहल्लक्षणा is, that where the primary sense is wholly abandoned and a new one substituted, as in मन्त्राः क्रोशन्ति, where

मञ्च signifies a child sleeping on a cot and not the cot itself. In अजहत्स्वार्था the word retains its primary sense and conveys something more, as in छत्रिणो यान्ति where both those who have umbrellas and those who have not are implied, or as in काकेभ्यो दधि रक्ष्यताम् where all birds including crows are to be kept off. The examples of जहदजहत्स्वार्था are सोऽयं देवदत्तः or तत्त्वमसि, where only a part of the primary meaning is retained and a part is left out as being inapplicable. In सोऽयं देवदत्तः सः means तत्कालीनो देवदत्तः while अयम् means एतत्कालीनो देवदत्तः and so to establish the identity of the two we leave out the qualifications तत्कालीन and एतत्कालीन. In तत्त्वमसि the तत् denotes निर्गुणब्रह्म and त्वम् denotes सगुणजीव ; so we leave out the properties निर्गुणत्व and सगुणत्व and make the two substances identical. A fourth kind, लक्षितलक्षणा, is also recognized by some, as in द्विरेफ, which primarily signifies the word भ्रमर and through it the object, bee. N. B. repudiates the last kind on the part of the *Naiyāyikas*, and ascribes it to *Vedāntins*.

16. Another division of लक्षणा is into रूढा or शुद्धा and गौणी, otherwise called प्रयोजनवती. Most of the above examples are of the first kind, where the implication solely rests on the unsuitability of शक्यार्थ. In गौणी implication is resorted to in order to suggest a third sense called प्रयोजन, as in गङ्गायां घोषः the qualities of coolness and holiness which really belong to the current are transferred to the bank. This suggested third sense is called व्यङ्ग्यार्थ and is supposed by rhetoricians to be conveyed by a third mode called व्यञ्जना.

17. व्यञ्जना is of two kinds शाब्दी and आर्थी, but *Naiyāyikas* recognize neither. शाब्दी, they say as in the above example, is invariably included in the गौणीलक्षणा and so need not be regarded as a separate mode. आर्थी is found in such examples as :—

Vyañjanā not recognized.

गच्छ गच्छसि चेत्कान्त पन्थानः सन्तु ते शिवाः ।

ममापि जन्म तत्रैव भूयाद्यत्र गतो भवान् ॥

Here the meaning conveyed by the speaker is प्रियगमनोत्तरं मे प्राणवियोगो भविष्यति ; but this sense, says T. D., is obtained by inference, and so the व्यञ्जना process becomes

अन्यथासिद्ध. According to *Naiyāyikas* therefore there are only two modes of conveying sense, *expression* (शक्ति) and *implication* (लक्षणा), of which the latter being secondary is based on the former. The definition of पद (शक्तं पदं) is therefore applicable in both cases.

SECT. LX, AND LXI. आकाङ्क्षा-योग्यता-संनिधयः.

Expectancy, compatibility, and juxtaposition are the causes of the knowledge of the meaning of a sentence. Expectancy is the inability of a word to convey the meaning of a sentence on account of the absence of some other word. Compatibility is the non-contradiction of the sense. Juxtaposition is the consecutive utterance of words.

A sentence devoid of expectancy, etc. is unauthoritative; e. g. (the words) cow, horse, man, elephant are not authoritative, being devoid of expectancy, etc. (The sentence) 'Sprinkle with fire is unauthoritative for want of compatibility; (the words) 'Bring a cow' pronounced at intervals are not authoritative owing to want of juxtaposition.

1. शब्द has been defined as a वाक्य, but an intelligible sentence cannot be formed simply by stringing together any number of words, as घटः पटः गां भित्तिः. In order to convey the combined वाक्यार्थ the words require the aid of some accessory properties, which are three, आकाङ्क्षा (Expectancy), योग्यता (Compatibility) and संनिधि (Juxtaposition).

2. The simplest definition of आकाङ्क्षा is अभिधानापर्यवसानम् 'non-completion of the sense owing to the absence of some other word or words'. Annambhatta defines it as 'the inability of a word (पदस्य) to convey (अनुभावकत्वं) the whole meaning of the sentence (अन्वय), which inability is caused (प्रयुक्त) by the absence (व्यतिरेक) of some other word (पदान्तर). If one says simply घटम्, a desire is at once

created to know *what about the jar*, and is satisfied only when we supply some such words as आनय which completes the sense. This desire to know is called आकाङ्क्षा and depends generally on the exact form of the words used. Thus घटमानय conveys four notions, a *jar* (घट), the objective relation (अवग्रहण), the act of bringing (आनी) and the command (the termination of Imp. 2nd sing.); and if any of these notions is wanting the sense remains so far incomplete. The imperfection cannot however be made up by saying घटः कर्मत्वं आनयनं कृतिः although these words import the same thing as घटमानय, because no आकाङ्क्षा is raised in this case.

3. योग्यता or compatibility is "the non-contradiction of sense." A word is said to have योग्यता with another when the meanings conveyed by the two are not inconsistent with each other. Thus we cannot say वाहना सिञ्चति or जलेन दहते, because the notions of fire and sprinkling as well as of water and burning are inconsistent and incompatible with each other. A sentence like this would therefore be meaningless owing to the impossibility of combining the two incongruous notions in one अन्वय.

4. The third requisite is संनिधि or आसन्निधि which consists in "the utterance of consecutive words one after another without interval between any two of them." A वाक्यार्थ is made up by the combination of the several notions of words, and it is therefore necessary that the impression made by each should remain fresh until this combination is effected. If however a long break occurs in the middle of a sentence, the previous impressions vanish before the sentence is finished, and the sense would remain incomplete. What constitutes संनिधि is, as T. D. remarks, the unbroken apprehension of all the words; and hence actual utterance of words is not absolutely necessary. In a written or printed book for instance we have no utterance, and yet we understand the वाक्यार्थ because the words are placed in juxtaposition. आकाङ्क्षा, योग्यता, and संनिधि, T. D. further adds, are necessary preliminaries for the comprehension of a sentence, not in themselves, but as known; that is, it is their know-

ledge that is required irrespective of their actual existence or absence. If a man wrongly conceives them to exist in a sentence when they really do not, he will make out a meaning of the sentence, while he will not understand a sentence possessing all the three, if he fails to detect their presence.

5. *Viśvanātha* adds a fourth requisite तात्पर्यज्ञान¹ 'knowledge of the intention of the speaker,'
Intended sense. which is often as necessary for the right understanding of a sentence as any of the preceding three. For instance, the sentence सैन्धवमांय might convey two distinct senses 'Bring salt,' and 'Bring a horse.' आकाङ्क्षा, योग्यता and संनिध, which are all satisfied here, are not in themselves able to tell us which of the two senses is to be accepted on a particular occasion, that is, which of the two things is intended by the speaker. This can be determined only by knowing the वक्तृतात्पर्य, which again is to be gathered from the circumstances under which or the occasion on which the sentence is spoken. If the speaker is dining he almost certainly orders salt, while if he is dressed and is going out, he orders a horse. Without this knowledge of the speaker's intention, it will be impossible to interpret a sentence wherever a word is ambiguous or has more than one sense. Perhaps this speaker's intention may be included in the second requisite योग्यता as compatibility of a meaning must always be judged with reference to the particular occasion or the probable intention of the speaker.

6. Although *Annambhalla* does not mention तात्पर्यज्ञान in this section, his reference to it in connection with लक्षणा in the commentary on the preceding section leaves no doubt that he accepts its necessity. His definition of तात्पर्य, namely तत्प्रतीतीच्छयेच्चरित्वम्, is however faulty. Words which convey a sense are not necessarily uttered with an intention to convey that sense. A fool or an idiot sometimes utters words which he does not understand but which are intelligible to others; a parrot pronounces words which have a meaning in ordinary

language; and yet there is no intention of the speaker in such cases. It may be urged against this that they are not real words at all, although appearing to be so. But what if a Vedic text is repeated by a person who understands nothing of it? The text is there and you cannot deny it, and yet there can be no वक्तृतात्पर्य. Again, if a teacher expounds such a text wrongly the meaning which he intends is at variance with the truth and can never be conveyed by the text. Or suppose one reads such a text in a book; there is no speaker here and there can be no तत्प्रतीतिच्छयोच्चरित्व. It cannot be argued that the original intention of the author of the text, viz. God, is to be assumed in such cases; because there are many, says *Vedānta-Paribhāṣā*, who do not recognize God as the author of the *Vedas* and yet are able to understand the meaning of them. The *Paribhāṣā* therefore proposes as a better definition तत्प्रतीतिजननयोग्यत्वे सति तदन्यप्रतीतिच्छया नोच्चरित्वं तात्पर्यम् 'fitness of the words to express a particular meaning, while there is no utterance with an intention to convey a different sense.'¹ The second clause is added to prevent a doubt in examples like सैन्धवमानय where, although सैन्धव is fit to express both salt and a horse, the intention is always to convey only one meaning and not the other. Even in cases where two meanings are intended to be simultaneously expressed, as in द्रुस्थ्या भूधरा रम्याः, the definition will apply since तद will comprehend both the senses.

SECT. LXII. वाक्यम्.

I. A sentence is of two kinds, sacred (वैदिक) or profane (लौकिक); the sacred, being pronounced by God, is always trustworthy, while a profane sentence is trustworthy if pronounced by a credible person. Any other is untrustworthy.

1. Having defined शब्द. word, as the fourth proof in general, the author divides it into two sorts, divine and profane. The वैदिक वाक्य is of four kinds, श्रुते, स्मृति, इतिहास and पुराण, of

Two kinds of sentences.

which each preceding is of a higher authority than each following. The definition in the text applies only to the श्रुति as other compositions are of human origin. श्रुति or Vedas proper are four ऋक्, यजुस्, सामन्, and आथर्वण, each of which is divided into three parts मन्त्र or संहिता, ब्राह्मण, and आरण्यक, the last including उपनिषद्. All these being of divine origin are to be implicitly believed. स्मृति is an authority only when श्रुति is silent or not inconsistent (विरोधे त्वनपेक्षं स्यादसति ह्यनुमानम्).¹ इतिहास and पुराण are of comparatively slender weight and are brought into requisition only when no higher authority is to be found.

2. The two-fold division of a वाक्य into sacred and profane is chiefly made for the purpose of implying that the rules laid down in the preceding three sections apply to लौकिक वाक्य only; but the unquestioned authority of the वैदिक वाक्य is not therefore inconsistent with them, since all the conditions of validity implied by them are taken for granted in the case of the Vedas.

T. D. here refers to two points which have long served as good bones of contention between *Mīmāṃsakas* and *Naiyāyikas*. The first is whether the Vedas are eternal or are special compositions by God. It must be remembered that there is no question here as to the human origin of the Vedas, since both the schools, being orthodox, agree in repudiating the notion of the Vedas being human creations like any other book. The word पौरुषेय which frequently occurs in this controversy solely refers to God; while अपौरुषेय means eternal, having no author at all. The *Mīmāṃsakas* claim eternity for the Vedas on two grounds; first, no tradition is known ascribing the authorship of the Vedas to any individual, the several Rsis mentioned as 'seers of hymns (मन्त्रद्रष्टारः) having only seen the hymns and not composed them. On the other hand we know the authorship of all human productions, as अष्टादशपुराणानां कर्ता सत्यवतीसुतः. Secondly, the Vedas themselves declare their own नित्यत्व in several texts, such as 'वाचा विरूपनित्यया,' 'अस्य महतो भूतस्य निःश्वसितमेतद्यद्वेदो यजुर्वेदः.' The *Naiyāyika* meets these arguments by contrary

¹ Jaimini : *Mīmāṃsā-Sūtras*. 1, 3, 3.

texts, such as तस्मान्नेषानात्वयो वेदा अजायन्त, and इदं सर्वमसृजत ऋचो यजूंषि सामानि.' Their strongest weapon however is the अनुमान, वेदः पौरुषेयो वाक्यत्वाद्भारतादिवत्, or वेदवाक्यरचना वक्तु-यथार्थवाक्यार्थज्ञानपूर्वा, वाक्यरचनात्वात्, अस्मदादिवाक्यरचनावत्. The *Mīmāṃsakas* try to refute this argument by calling it सोपाधिक, the उपाधि being स्मर्यमाणकर्तृत्व; that is, they mean that the above reasoning is applicable only to those works whose authorship is known. The *Naiyāyikas* answer that even the authorship of the Vedas was known since it was remembered by *Rṣis* like *Gotama* by the tradition of teaching. Besides if the Vedas had been eternal, all the words and letters in them would be co-existing, and so there would be no order of words (वर्णानुपूर्वी) etc., without which there can be no आकाङ्क्षा and no शाब्दबोध. The Vedas therefore must have been produced by some one, and as no human origin is possible in the case of works containing such transcendental wisdom, they must be the work of God. The *Vedāntin*, who is eminently a compromiser, tries to reconcile these opposite views, by supposing that the Vedas as they exist at present are अनित्य, but they are merely copies of similar compositions existing in the previous cycles, the authority for this opinion being the text, घाता यथापूर्वमकल्पयत्. This in short means that the Vedas are eternal as to substance (अर्थ), but non-eternal as to form (आनुपूर्वी).¹

3. The question of the eternity of the Vedas is involved in the larger question whether sound is eternal. Sound is a quality of *Ākāśa* and is eternal like it, भेरीदण्डसंयोग and other accidental causes only serving to reveal it to our ears. We always recognize the letter ग as the same, and so it cannot vanish away the moment it is pronounced. (The *Naiyāyikas* prove the non-eternity of sound by अनुमान thus : --शब्दोऽनित्यः । सामान्यवत्त्वे सति बाहिरिन्द्रियजन्यलौकिकप्रत्यक्षविषयत्वात्, लौकिकप्रत्यक्ष-विशेष्यत्वाद्वा । घटवत्. *Gotama* gives three reasons for the non-eternity of sound :—1 that it has a beginning, 2 that it is perceived by organ of sense, and 3 that the attributes of a

product are ascribed to it.¹⁾ The identification of one गकार with a former one can be accounted for by similarity just as we identify one lamp-flame with another that formerly stood in its place.

SECT. LXIII. शाब्दम्.

Verbal knowledge means the knowledge of the meaning of a sentence ; its proximate cause is the Word.

1. *Annambhatta* winds up the discussion of शब्द by the declaration that it is the knowledge of the meaning conveyed by the whole sentence which is the real *verbal knowledge*, that is, the फल mentioned above as the fourth kind of *apprehension*. The special cause of this फल is the शब्द or the sentence which conveyed that sense. This emphatic declaration seems to be made in order to repudiate the view of the modern *Naiyāyikas*, that it is not the पद but the पदज्ञान that is the real करण of शाब्द-बोध. *Viśvanātha* who prefers the modern view says in B. P. 80 :—

पदज्ञानं तु करणं द्वारं तत्र पदार्थधीः ।

शाब्दबोधः फलं तत्र शक्तिधीः सहकारिणी ॥

He then goes on in his commentary न तु ज्ञायमानं पदं करणम्, पदाभावेऽपि मौनिश्लोकादौ शाब्दबोधात्.² If the word itself be taken as the करण of शाब्दबोध, how do we understand a verse written by a dumb man without uttering a single word? It is therefore the knowledge of the word, whether heard orally or seen in writing, that really produces the शाब्दबोध. The distinction is practically unimportant, although it has great historical significance, since it marks the stage when, writing having come to take a large place previously occupied by oral tradition.

1 G. S. II, 2, 14.

2 S. M. Calc. ed. p. 78.

the absurdity of defining शब्द in terms of actual utterance was perceived and the difference between writing and oral tradition was abolished. Apparently *Annambhaṭṭa*'s opinion differs from both the above views, since he makes शब्द the करण and defines शब्द as a वाक्य or पदसमूह and not a पद. But this is not so, because according to *Naiyāyikas* a पदसमूह is not different from its components, the several पदs. Perhaps by शब्द *Annambhaṭṭa* may be meaning शब्दज्ञान or पदज्ञान, just as in a former section he interpreted आकाङ्क्षा etc. as आकाङ्क्षादिज्ञान; and if this is the case his view will agree with the modern one. At any rate his laxity of expression on this point shows that he did not regard the distinction as very material.

2. T. D. here briefly notices the argument of the *Vaiśeṣikas*, who recognize only two proofs, *Perception and Inference*, viz. that Word is not a distinct proof as it can be included under *Inference*. The syllogism by which the connection (संसर्ग) between a word and its sense is to be known may be stated either as T. D. puts it, or as एते पदार्थाः परस्परसंसर्गवन्तः । आकाङ्क्षायोग्यतासत्तिमत्पदस्मारितत्वात् । दण्डेन गामानयेतिपदस्मारितपदार्थवत् ; that is, the पक्ष in the inference may be either the पद as T. D. makes it, or the पदार्थ as is done in the syllogism given here. Either way, the inference is incapable of producing शाब्दबोध, for the knowledge conveyed by words is of an altogether distinct kind from that imparted by an inference, and besides produces the consciousness, 'I know from words,' which differs from the consciousness 'I know by inference.' This is not a very satisfactory reply since it rests on self-consciousness which may vary with different persons. *Udayanūcārya* gives a more convincing refutation of the *Vaiśeṣika* view :--अनैकान्तः परिच्छेदे संभवे च न निर्णयः ।¹ An inference like the above is impossible ; for the conclusion of it can only be a certainty (परिच्छेद) or a mere possibility (संभव) ; if it is the former, the syllogism involves an अनैकान्तिक हेत्वाभास as a certain conclusion is not warranted by the premises ; while if the latter, there is no ascertainment (सिद्धि) of the साध्य, and consequently no शाब्दबोध. Hence शब्द

must be recognized as a distinct proof, producing a cognition of a peculiar sort.

3. The description of the four proofs is concluded here, and the rest of the passage in T. D. discusses two points having reference to the whole chapter on 'proofs.' The first point is whether the four proofs, hitherto described, exhaust the number of valid proofs. The variety of opinions on this head amongst the different schools is almost perplexing. [The total number of proofs thus recognized by one or more schools is ten, namely, 1 प्रत्यक्ष (Perception), 2 अनुमान (Inference), 3 उपमान (Comparison), 4 शब्द (Word), 5 अर्थापत्ति (Presumption), 6 अनुपलब्धि (Non-perception), 7 संभव (Inclusion), 8 ऐतिह्य (Tradition), 9 चेष्टा (Sign) and 10 परिशिष (Elimination). Of these each of the known philosophical schools recognize only a particular number varying from one to ten. Thus, the *Cārvākas* or Atheists accept only *Perception*, repudiating the validity of all the rest ; the *Vaiśeṣikas*, the *Bauddhas* and the *Juinas* accept two, *Perception* and *Inference* ; the *Sūṅkhyas*, *Yogins*, Lawyers, and a section of *Vedāntins* accept three, the above two with *Word* ; the *Naiyāyikas* add a fourth, *Comparison* ; the *Mīmāṃsakas* and some *Vedāntins* accept two more, *Presumption* and *Non-perception* ; the *Paurāṇikas* or Mythologists add further *Probability* or *Inclusion*, and *Tradition* ; while the ninth, *Sign*, is recognized by *Tāntrikas* only. *Elimination* also, though only a species of inference, is regarded as a distinct proof by some *Mīmāṃsakas*.] *Annambhaṭṭa* having accepted the *Naiyāyika* doctrine of four proofs disposes of the rest by short references. [संभव, ऐतिह्य and चेष्टा are easily disposed of by including the first in अनुमान and the latter two in शब्द. *Non-perception* has been already discussed under a previous section' and declared to be only an accessory to the perception of negation.]

4. The severest contest lies round अर्थापत्ति. [The *Naiyāyikas* strenuously try to include it in Inference, while the *Mīmāṃsakas* as strenuously maintain that it is an independent proof. The stock example of अर्थापत्ति is पीनो देवदत्तो

दिवा न भुङ्के । अर्थात् रात्रौ भुङ्के । 'Devadatta being fat does not eat in daytime ; and so he must be eating at night.' Night-eating is thus *presumed* on the ground of the known impossibility of remaining fat without eating, unless of course as *Nilakaṇṭha* suggests, the fatness is due to disease or superhuman power. The exceptions of course need not be taken into account here. This अर्थापत्ति which is advocated by *Prābhākara Mīmāṃsakas* is of two kinds, दृष्टार्थापत्ति and श्रुतार्थापत्ति. When the knowledge देवदत्तो दिवा न भुङ्के on which the presumption is based is obtained by actual sight, it is the first ; when it is got by hearsay from another person it is the second. Both these kinds of अर्थापत्ति are included by *Naiyāyikas* in अनुमान. The inference is of the केवल-व्यतिरेकि kind, देवदत्तो रात्रिभोजनकर्ता, दिवाभुञ्जानत्वे सति पितृवात्, यत्नैवं तन्नैवं यथा रात्रावभोजी यज्ञदत्तः. *Presumption* is therefore not a separate proof, for all cases of it are accounted for by केवलव्यतिरेकि अनुमान. The difference between *Nyāya* and *Mīmāṃsā* views on this point is only of लाघव and गौरव. The *Mīmāṃsakas* recognize a fifth proof अर्थापत्ति to account for all kinds of presumptions and thereby dispense with the केवलव्यतिरेकि inference, while the *Naiyāyikas* accept the latter and repudiate अर्थापत्ति. The dispute between them is therefore reduced to the question which view has लाघव on its side ; that is, whether it is simpler to recognize a new proof or a new variety of inference. Apparently the *Naiyāyikas* have the better of it ;] but if we take into account the difficulties and absurdities into which the *Naiyāyikas* have involved themselves by their recognition of केवल-व्यतिरेकि लिङ्ग, we cannot certainly commend them for their apparent 'simplicity.'

5. The second point noticed by T. D. is of the utmost importance, as it in fact lies at the very

The validity of knowledge.

root of the whole theory of proofs. [We see a jar and have the cognition अयं घटः or घटमहं जानामि ; but how do we know that we really see the घट, and that our perceptive knowledge is not a mis-apprehension of something that is not घट ? That is, how do we in practice distinguish a प्रमा from भ्रम ? We may or we may not see the reality of घट ; but what test is there to prove that we see the reality and not a shadow ? A प्रमा

has been defined as तद्वति तत्प्रकारकं ज्ञानं 'knowledge of a thing possessing any property as possessed of that property.' It is thus comparatively easy to define what प्रमा is ; but how are we to ascertain whether a given piece of knowledge is a प्रमा or अप्रमा ? The necessity of this ascertainment is obvious, for without it there can be no certainty of knowledge and all human intercourse would be impossible. The question therefore how to determine the truth of our cognitions becomes a necessary corollary to any theory of knowledge.]

6. [The question is resolved into the alternatives whether right knowledge is स्वतःप्रमाण 'self-proved' or परतःप्रमाण 'proved by something else.'] *Mādhavācārya* quotes two verses which summarize the four principal views on this point :—

प्रमाणत्वाप्रमाणत्वे स्वतः सांख्याः समाश्रिताः ।

नैयायिकास्ते परतः सौगताश्चरमं स्वतः ॥

प्रथमं परतः प्राहुः प्रामाण्यं वेदवादिनः ।

प्रमाणत्वं स्वतः प्राहुः परतश्चाप्रमाणताम् ॥ १

[“Of the two things ‘authoritativeness (प्रामाण्य) and ‘non-authoritativeness’ (अप्रामाण्य), the *Sāṃkhyas* consider both to be self-proved ; the *Naiyāyikas* hold both to be known externally ; the *Bauddhas* think that ‘non-authoritativeness’ is self-proved but the other is proved externally. Lastly, teachers of the *Vedas*, i. e. the *Mīmāṃsakas* maintain that प्रामाण्य is self-proved but अप्रामाण्य requires external proof.” This diversity of opinions about प्रामाण्य may be stated briefly by saying that according to *Sāṃkhyas* both the truth and falsity of a cognition are known intuitively; according to *Naiyāyikas* both are proved by independent reasoning and therefore neither can be presumed until thus proved ; according to *Bauddhas* a cognition is *prima facie* incorrect and true if only proved to be so by special evidence; while the *Mīmāṃsakas* regard a cognition as presumably correct, but false when actually proved to be so. As we are mainly interested in determining प्रमात्व only, the contest chiefly lies between the *Naiyāyika* view of परतःप्रामाण्य and the *Mīmāṃsā* doctrine of स्वतःप्रामाण्य.] T. D. first states the *Mīmāṃsā* view fully

as a पूर्वपक्ष, and then refutes it in order to establish the सिद्धान्त of *Nyāya* that the truth of knowledge is proved externally.

7. The स्वतस्त्व of प्रामाण्य is defined, तदप्रामाण्याग्राहकयावज्ज्ञानग्राहकसामग्रीग्राह्यत्वम्, 'the property of being apprehended by the same entire body of the means which produce the knowledge, but do not prove its falsity.' Three conditions are implied in this definition, that the truth of knowledge is apprehended by the same means which produce the knowledge, that the means include every thing that is instrumental in producing the knowledge, and that they should not include anything that affects the truth of the knowledge. The necessity of the two latter qualifications is shown by T. D. The definition speaks of the totality of means in order to include an inference that may be sometimes used to prove प्रामाण्य, although it may have been previously known by आप्तवाक्य; and it excludes a contrary cognition इदं ज्ञानमप्रामा which, being बाधक, may prevent the apprehension of प्रामाण्य, provided of course this contrary cognition arises with reference to the knowledge itself and not to the subsequent अनुव्यवसाय. Besides, the *Naiyāyikas* themselves in a way assent to स्वतःप्रामाण्य, since, as they go so far as to accept that घट, घटत्व as well as the संबन्ध of the two, are cognized by अनुव्यवसाय, they should have no difficulty in accepting the cognizability by the same अनुव्यवसाय of the respective knowledge of those things. The *Naiyāyika* however rejects this last view, viz. that अनुव्यवसाय cognizes घट, घटत्व as well as their संबन्ध, and then refutes the whole पूर्वपक्ष. The chief objection of the *Naiyāyika* against स्वतःप्रामाण्य is that it leaves no room for the possibility of a doubt, which as a matter of fact we often feel, whether a certain cognition is true or not. If the प्रामाण्य is intuitive and is known along with the cognition itself, such a doubt can never arise. The validity of any cognition is therefore determined by a subsequent केवलव्यतिरेकि inference which is based on the intervening actual experience of the thing. Thus first we believe we see water; then this belief produces इच्छा (for the water), which produces प्रवृत्ति (towards it). This प्रवृत्ति is satisfied if the water really exists there, but not if it is simply a mirage. Hence the satisfaction of प्रवृत्ति is a proof of the reality of our perception; that is, the truth of our perception is determined by external evidence. Similarly the

truth of words is ascertained by their being यथार्थ *i. e.* being in harmony with external things.

8. The advocates of परतःप्रामाण्य think that a प्रमा is produced by the presence of some positive गुण, which varies with the nature of the प्रमा, that is, in perception it is विशेषणवद्दिश्यसंनिकर्ष and so on; while an अप्रमा is caused by the presence of some दोष such as distance, defective sight etc.¹ According to the other side, no positive गुण is required for प्रमा but simple देशभाव is quite sufficient. The chief objection of स्वतःस्ववादी against the *Naiyāyika* view is that if the truth of one cognition is to be determined by an extra inference, the validity of that inference again will have to be ascertained by a third inference, and so on *ad infinitum*. In this way there will be no certainty of knowledge.² It is unnecessary to enter further into this interesting but endless controversy. The reason why it was pursued with so much vigour on both sides seems to be its important bearing on the question of the authority of the *Vedas*. If शब्द was स्वतःप्रमाण as the *Mīmāṃsakas* held, the truth of the *Vedas* was self-evident, and they required no external sanction to prove their claim to unflinching obedience; while if शब्द was परतःप्रमाण, the *Vedas* required some external proof of their authority, such as the fact of their being composed by Omniscient God. The *Bauddhas* denied the authority of the *Vedas* altogether, while the *Naiyāyikas* made it dependent on God's authorship. This may be one reason why the *Naiyāyikas* and *Vaiśeṣikas* were termed by their more orthodox rivals, अधवैनाशिकस or *Semi-Buddhists*.

9. T. D. incidentally notices another doctrine of the *Prābhākara* school of *Mīmāṃsakas* that all knowledge is true (of course so far as it goes), and consequently the distinction between प्रमा and अप्रमा is unfounded. If प्रवृत्तिजनकत्व is the test for the reality of knowledge, then the erroneous apprehension of silver on mother-o'-pearl also sometimes produces a प्रवृत्ति, and will therefore be प्रमा while that प्रवृत्ति can be fully accounted for by the recollection of

1 B. P. 130-3.

2 For a fuller discussion see *Sarva, D. S.* Calc. ed. pp. 129-32, and *Ved. Par.* Calc. ed. p. 27.

the formerly-seen silver and the *percept* of the object present. This cannot be, says the *Naiyāyika*; because there is much लाघव in ascribing प्रवृत्तिजनकत्व to the actual प्रमा itself. The erroneous apprehension of silver on श्रुति may appear to be true so long as it lasts, but it is not प्रमा because it is not तद्वति तत्प्रकारक ज्ञान.

SECT. LXIV. अप्रमा.

Wrong apprehension is of three kinds, doubt, error and false assumption. Doubt is the apprehension of various contrary properties in one object, e. g. Is it a post or a man? Error is false knowledge, as silver in a conch-shell. False assumption is the deduction of a wider thing by the wrong hypothesis of a narrow one, e. g. if there be no fire there would be no smoke.

1. Having treated यथार्थज्ञान, the author in the present section enumerates the varieties of अयथार्थानुभव 'wrong apprehension' because to understand *true apprehension* fully we also require a knowledge of its opposite *misapprehension*. अयथार्थानुभव is already defined as "the cognition of a thing as possessed of an attribute which in fact it does not possess." It has been well said that truth is one, but falsehood is various. Hence the definition of अयथार्थज्ञान contains no restriction as to certainty. *Misapprehension* may therefore be first divided into Certitude (निश्चय or म) and In-certitude (संशय), Certitude again may be either conscious or unconscious, that is, it may either have been voluntarily and purposely assumed (आहाय), or it may have been caused by some adventitious circumstance called दोष (अनाहाय). The first is called तर्क and is assumed with a full consciousness of its falsity; the second is called विपर्यय or विपर्यास and is involuntary. संशय or doubt is always involuntary (अनाहाय), because as soon as the error is perceived it is at once dispelled.

Thus *Misapprehension* naturally splits into three kinds :

Varieties of mis-
apprehension. Doubt, Error and False Assumption or Hypothesis. Some include तर्क in विपर्यय for the obvious reason that though voluntarily made on the part of one of the two disputants it does not essentially differ from any other kind of *error* ; but *Annambhatta* gives prominence to it by mentioning it separately, because although invalid itself it is often useful in argumentation and assists the valid proofs in obtaining right knowledge. Dream, says T. D., is included under विपर्यय, while the fallacies of inference already mentioned will also fall under the same head.

2. *Doubt* is defined as " the knowledge of various contrary properties in one and the same object. " The propriety of each of the three limitations एकस्मिन् धर्मिणि, विरुद्ध and नाना,

Doubt. is explained by T. D. *Doubt* has three characteristics, that the knowledge must be of several properties, that they must be irreconcilable with one another, and that they must be apprehended in the same thing. The definition however is not quite satisfactory, for it contains the word विरुद्ध which is not very easy to define. There is no certain test to determine what properties are contrary to one another and what not. Roughly we may say that those which are never observed together as existing in one object are irreconcilable. For example, अश्वत्व and मनुष्यत्व are, one might say, विरुद्ध because they are never observed together ; but suppose a centaur which is half-man and half-horse is actually found on earth, then, they will no longer be विरुद्ध. Besides even supposing that they are विरुद्ध properties and that a centaur does not really exist, the definition of संशय would still apply to the imaginary notion of a centaur which is undoubtedly a knowledge of several contrary properties in one thing. This last objection may however be answered by saying that a centaur being wholly an imaginary being there is no धर्मा on which the contrary properties are to be imposed. A better definition is एकस्मिन् धर्मिणि विरुद्धनानाकोटिकं ज्ञानम्. कोटि is an alternative, and the contrary कोटि is the property and its negation. Thus when we have a doubt शब्दो नित्यो न वा, नित्यत्व is one कोटि and अनित्यत्व is the other ; and

the संशय is said to be द्विकोटिक. When we have a doubt अयं स्थाणुवा पुरुषो वा, it is चतुष्कोटिक; for there we have four possible cases अयं स्थाणुः, अयं न स्थाणुः, अयं पुरुषः and अयं न पुरुषः.

3. विपर्यय (Error) is of course any false notion, and is the *mis-apprehension* proper. तर्क *Reductio ad absurdum* requires some explanation. The definition of तर्क in the text is rather vague. Literally it signifies the imposition of a more extensive thing through the assumption of the less. The example given is however quite misleading. वह्न्यभाव is व्याप्य and धूमाभाव is व्यापक; therefore we assume the existence of वह्न्यभाव and deduce from it by means of a regular syllogism the existence of धूमाभाव, as in the sentence यदि वह्निर्न स्यात्तर्हि धूमोऽपि न स्यात् which implies that वह्न्यभाव necessarily leads to धूमाभाव. This is called व्याप्यारोपेण व्यापकारोपणम्, and this according to Annambhatta's definition would be तर्क. But no one can say that the proposition, 'वह्न्यभाव necessarily leads to धूमाभाव,' is a *mis-apprehension*, since it is perfectly correct and does nothing more than express the वह्निव्याप्यत्व of धूम negatively. As a matter of fact the proposition only expresses the व्याप्ति by which the conclusion, denominated तर्क, is arrived at. Properly speaking तर्क is neither the process of hypothetical reasoning in which a false conclusion is deduced from a wrongly assumed hypothesis (as some have erroneously supposed), nor is it the व्याप्ति on which such conclusion is based, as Annambhatta's illustration has led others to believe. Such a mistake seems to have been committed by Roer who translates तर्क by 'discussion,' and by Ballantyne who translates Annambhatta's व्यापकारोपः by "consists in establishing the pervader etc." ² (आरोप is not the act of आरोपण but the conclusion that is आरोपित, namely, अत्र (पर्वते) धूमो नास्ति. This conclusion which is called तर्क is false, because it is contradicted by our actual perception of smoke on the mountain.)

4. The process of arriving at his *Reductio ad absurdum* conclusion is this. Suppose one observes smoke on the mountain

1 Roer's Trans. of B. P. Bibl. In. p. 69-70.

2 Ballantyne : Lectures on Nyāya Phil. p. 52.

and wishes to infer fire from it. He thereupon declares the प्रतिज्ञा and हेतु, पर्वतो वह्निमान् धूमात्, and then states the अन्वयव्याप्ति, यत्र यत्र धूमः etc. But his adversary may not admit the व्याप्ति to be correct. How is he then to proceed? He cannot infer fire from smoke, unless the *invariable concomitance* of the two things is accepted by the adversary. He therefore resorts to the reverse process of reasoning called *Reductio ad absurdum*, in which he grants, for the sake of argument, the groundless contention of his adversary, namely, that the mountain is not fiery, and deduces from it by a regular and correct syllogism, a conclusion (Mountain has no smoke) which is palpably absurd as it is directly contradicted by the observed fact of smoke. And the absurdity of this conclusion of course proves the absurdity of the hypothesis from which it was deduced, namely, the contention of the adversary. In order to do this he begins by asking पर्वतो वह्निमान् न वा. If the former alternative is accepted, then of course his conclusion is admitted, and he need not proceed; but if the adversary accepts the latter, then he goes on:—यदि पर्वतो वह्निमान् न स्यात् तर्हि स धूमवानपि न स्यात्. If the adversary questions this he is at once asked to produce an instance where smoke is found in the absence of fire; but this he cannot do since धूम being the काय of वह्नि can never exist apart from it. The adversary is therefore forced to accept the व्याप्ति, यत्र यत्र वह्नेयभावस्तत्र धूमाभावः. Now his assumption is पर्वतो वह्नेयभाववान्; therefore he reasons पर्वतो धूमाभाववान् । वह्नेयभाववत्त्वात् । यत्र यत्र वह्नेयभावः etc. Thus he gets at the conclusion पर्वतो धूमाभाववान्; but this must be false as it is directly opposed to the observed fact पर्वतो धूमवान्. The assumption therefore from which this absurd conclusion is derived, namely पर्वतो वह्नेयभाववान्, must be false, and its contradictory पर्वतो वह्निमान् must be true. Here the speaker first imposes or assumes the existence of व्याप्य *i. e.* वह्नेयभाव on the mountain, and from that (आरोपेण) deduces the existence of व्यापक *i. e.* धूमाभाव, both of which impositions being false are properly termed आरोप. The deduced आरोप, namely the absurd conclusion, is called तर्क. The real sense of *Annamkhaṭṭa's* definition is thus brought out in *Nilakantha's* paraphrase, आहार्यव्याप्यवत्ताभ्रमजन्य आहार्यव्यापकवत्ताभ्रम-रतर्कः; that is, an obviously wrong notion as to the existence

of व्यापक on the पक्ष, derived from a similar palpably wrong assumption of the existence of व्याप्य in the same place.

5. The तर्क differs from विपर्यय in being formed by one who knows its falsity, while it differs from a बाधित अनुमिति in being only subsidiary to the establishment of its contradictory. Ancient *Naiyāyikas* mentioned eleven kinds of तर्कs, of which the moderns accept only five, viz. आत्माश्रय (*Ignoratio Elenchi*), अन्वयेन्याश्रय (*Dilemma*), चक्रक (*Circle*), अनवस्था (*Regressus ad infinitum*) and प्रमाणबाधितार्थप्रसङ्ग (*Reductio ad absurdum*). The example usually given comes of सव्यभिचार and असिद्ध fallacies framed in particular forms. The तर्क or केवलन्यतिरेकि अनुमान is very useful in proving things which cannot be proved by positive inference, and is particularly indispensable in theological discussions. Religious commands which transcend our limited reason can be justified only by such special arguments; Manu therefore says :—

आर्ये धर्मोपदेशं च वेदशास्त्राविरोधिना ।

यस्तर्कैणानुसंधत्ते स धर्मं वेद नेतरः ॥ (M. S. XII. 106.).

In matters of religion which are above and beyond positive human experience तर्क or contrary inference is often the only method available to satisfy the inveterate doubter or silence a persistent adversary. Kant had to assume a separate faculty of Intuition to account for all such extra-sensuous knowledge. *Naiyāyikas* solved the difficulty by adopting तर्क inference.

SECT. LXV. स्मृतिः.

Remembrance also is of two kinds : true and false ; the one arising from true cognition is true, that arising from false cognition is false.

1. स्मृति (Remembrance) has been already defined in

*Right and wrong
Remembrance.*

Section 34. After treating of the two kinds of apprehensions, true as well as false, the author announces a similar division of

Remembrance. But the *fundamentum divisionis* is different in this case. अनुभव is true or false according as it does or does

not correspond to the object as it exists externally; while the truth or falsity of स्मृति is made to depend entirely on the truth or falsity of the अनुभव from which it originates. (A remembrance which springs from *right apprehension* is right and that which springs from *wrong apprehension* is wrong. The reason of this difference of tests for अनुभव and स्मृति probably lies in the fact that स्मृति being a mediate knowledge is not directly connected with external objects. Besides a remembrance is often considerably removed both in time and place from the first *apprehension*, and consequently the test of प्रामाण्य applicable to all first-hand cognitions, namely the inference based on actual verification of the external object, is generally not available in the case of स्मृति. When we believe we see water, we can at once verify the truth of our perception by touching or drinking the water ; but when we only remember to have seen water some time back and at a distant place, it is obviously impossible for us to go to the place and verify the truth of our स्मृति. Hence a different test of truth is applied to स्मृति, a test, by the way, recognized in the case of all mediate cognitions, namely, the correctness or incorrectness of the original notions which produce them. Thus the validity of an अनुमिति depends on the validity of the परामर्श, while the truth of शाब्दबोध depends on the correct knowledge of the वाक्य. Similarly the truth of स्मृति depends upon the truth of the original अनुभव. But there is one drawback to this method. Suppose the original अनुभव was true but the impression left by it is distorted or partially effaced by lapse of time ; then the remembrance will be obviously mutilated and false, although the apprehension itself was right. Or suppose both the apprehension and the impression were good, but owing to some accidental cause, such as a want of proper उद्बोधक or the presence of any obstruction or inattention, the remembrance does not fully agree with the अनुभव ; yet it cannot be प्रमा. Again dreams are supposed to be स्मरणरूपक and are often produced by actual experience of the things perceived ; why are then all dreams false ? These objections can be answered by saying that every स्मृति requires to be verified, if not with external objects, at least with true cognitions of those external objects.

SECT. LXVI—LXXII. सुखादयो गुणाः.

What is experienced by all with agreeable feelings is Pleasure.

What is experienced by all with disagreeable feelings is Pain.

Desire is yearning.

Aversion is irritation.

Action is effort.

Merit is the product of enjoined actions.

Demerit is the product of prohibited actions.

1. Sections 66 to 72 contain short definitions of the next seven qualities. The group consists of three pairs of co-related qualities, namely सुखदुःख, इच्छाद्वेष, and धर्माधर्म and one single quality प्रयत्न. The two qualities which form each a pair, though co-related, are not contradictions of each other; but both are positive qualities of opposite kinds.

2. सुख (Pleasure) is defined in the text, as 'that which is experienced by all with agreeable feelings', while दुःख (Pain) is 'that which is experienced with disagreeable feelings.'

They are not *absolute negations* of each other; and may often co-exist, as when a king enjoys much pleasure together with occasional grief. The definitions of सुख and दुःख given in the text seem to be faulty, and are therefore replaced by better ones in the commentary, for, as *Nilakantha* remarks, मूलं सुखादिलक्षणपरं न संभवति, परद्रव्योपभोगादिजन्यसुखे साधूनां द्वेषदर्शनादव्यतिरिक्त्याशङ्कायां मुख्यहमित्यादिप्रत्यक्षप्रसिद्धं सुखत्वादिकमेव लक्षणम्. It is unphilosophical to label once for all certain external objects as सुखकारक and certain others as दुःखजनक, for the same thing may be pleasurable to one man and painful to another. The best criterion in this case is therefore the individual experience of each man (सुखहमित्यनुव्यवसायः). But the question again arises what kind of individual experience is pleasurable and what is painful. Hence more elaborate definitions of सुख and दुःख are given, like those in N. B. सुख, says N. B., is इतरेच्छानर्धनिच्छाविषय, that is, pleasure is desired for its own sake and not for the purpose of satisfy-

ing the desire of some other thing ; or in other words pleasure is the ultimate aim of all our acts and is not a means to some other end. Similarly pain is the object of aversion in itself, and not because it causes aversion for any other thing.

3. इच्छा and द्वेष, *desire* and *aversion*, are respectively defined as 'wishing' and 'irritation.'

Desire and aversion.

4. प्रयत्न or *effort* is not the actual act, but rather the readiness of the mind coupled with an attempt towards performing that act, as when a dying person makes an *effort* to speak, but cannot do so owing to a failure of his powers. प्रयत्न or कृति as it is sometimes called is therefore best rendered by *effort*, or *volition*.

Effort.

5. धर्म (*merit*) and अधर्म (*demerit*) are the two varieties of अदृष्ट (*Destiny*), and imply two positive things popularly known as पुण्य and पाप respectively. *Merit* is that which is produced from acts enjoined by *Śruti*, while *demerit* is produced from the doing of prohibited acts. For example, the Vedic text ज्योतिष्टोमेन स्वर्गकामो यजेत is a विधि, and therefore the performance of a ज्योतिष्टोम sacrifice would produce *merit*; while न कलञ्जं भक्षयेत् being a निषेध, the eating of कलञ्ज fruit would produce *demerit*.

Merit and Demerit.

SECT. LXXIII and LXXIV. आत्मगुणाः.

The eight qualities, cognition etc. are special attributes of soul only.

Cognition, desire and effort are of two kinds : eternal and non-eternal; eternal belong to God, non-eternal to human soul.

1. The eight qualities from बुद्धि to अधर्म are the special characteristics of soul only, i. e. they are subjective as opposed to other qualities which have objective or external

existence. They are also co-related to one another as cause and effect, and are mentioned in that order. Each of these in fact is the effect of that immediately preceding it and the cause of that next following it. बुद्धि *Cognition* is of course the foundation of all internal experiences. Of these सुख and दुःख are the ultimate objects to be desired or avoided. The notions of pleasure and pain respectively produce corresponding desire (इच्छा) or aversion (द्वेष) for their means. This desire or aversion gives rise to an effort (प्रयत्न) directed towards obtaining or avoiding those means. Good and bad efforts produce merit and demerit respectively; while these last produce a संस्कार on the mind, which संस्कार becomes, when ripened, the cause of a succession of births.

2. विशेषगुण or special qualities are enumerated in the verse quoted at p. 86 *supra*. Out of these, eight *i. e.* the six, intellect, pleasure, pain, desire, aversion and effort, and *Adṛṣṭa* or fate including both merit and demerit are the special qualities of Soul only. The significance of मात्र, only, is that these qualities reside in Soul alone and nowhere else, while the other special qualities are found in other substances. A विशेषगुण is defined by T. D. in the next section as a quality that resides in one substance only at a time and not in two or more substances conjointly, such as number etc. See p. 87, *supra*.

SECT. LXXV. संस्कारः.

Faculty or Impulse is of three kinds : Velocity, Mental impression and Elasticity.

1. संस्कार or *Faculty* is almost undefinable, as may be guessed from the truism given by T. D. The reason of it seems to be that its three varieties are so incongruous and different in nature that no general definition can be equally applicable to all. The wonder rather is how these irreconcilable things came to be classed under one head. S. C. gives a definition which is only a little better : सामान्यगुणात्मविशेषगुणोभयवृत्तिगुणत्वव्याप्यजातिमान्, 'that which has a जाति (संस्कारत्व) which is next below गुणत्वजाति and which resides in

both the *general* qualities and the *special* qualities of Soul.* The qualities are sharply divided into two classes, *general* and *special*, but संस्कार is the only quality which is common to both, since two of its varieties, *Velocity* and *Elasticity* go under *general* qualities, while the third called भावना or *mental impression* is the *special* quality of Soul. Another and perhaps a still better definition of संस्कार is given by *Tārakā-Rakṣā* :—यज्जातीयः समुत्पाद्यस्तज्जातीयस्य कारणम् । स्वयं यस्ताद्विजातीयः संस्कारः स गुणो भवेत्¹ ॥ “A property which produces an effect from a cause of the same kind, although it is itself dissimilar.” This means that whenever a quality or action in a thing is repeated or produces effects exactly similar to itself by some internal force and without external agency, the internal force is called संस्कार.

2, The three varieties of संस्कार are वेग (*Velocity*), भावना (*Mental impression*) and स्थितिस्थापक (*Elasticity*). (The first is said to reside in the five corporeal (मूर्त) substances only, namely, earth, water, light, air and mind; and the reason is obvious, for there can be no *velocity* or motion unless the thing has a limited dimension. भावना is simply defined as that impression which is born of अनुभव and becomes the cause of remembrance. स्थितिस्थापक or *Elasticity* is that power or force which brings a thing back to its normal shape or condition whenever it is distorted. *Elasticity* is found in earthy things such as a mat.) The several remarks of T. D. have been already explained in their proper places, and so need not be noticed here. Of these three varieties भावना alone deserves the name of संस्कार, and is generally referred to by that word. The other two are common properties of all material things and can be termed संस्कार only by a very far-fetched analogy. Ballantyne thinks that the similarity of the three varieties of संस्कार consists in the thing acting by itself without an impulse from an external agent. The explanation is plausible, though not quite convincing. संस्कार is therefore an impulse inhering in the very thing in which a property reproduces itself. This is at best the only characteristic wherein the three varieties agree.)

SECT. LXXVI--LXXIX. कर्मसामान्यसंवायविशेषः.

Action consists of motion. That which causes connection with the region upwards is Tossing; that which causes connection with the region downwards is Dropping; that which causes connection nearer the body is Pulling or Contraction; that which causes connection with a distant place is Rushing or Expansion. All else is Motion, residing only in the four substances Earth etc. and mind.

These sections treat of the remaining categories except the last. For an explanation of them, see Notes on Sect. V. to Sect. VIII. pp.81-99 Supra.

SECT. LXXX. अभावः.

Antecedent negation is without a beginning but has an end, and exists before the production of an effect. Destruction has a beginning but no end, and occurs after the production of effect. Absolute negation exists during three times, (past present and future) and has a counter-entity determined by connection (with another), e. g. there is no jar on ground. Reciprocal negation is that whose counter-entity is determined by relation of identity, e. g. a jar is not a piece of cloth.

1. अभाव or Negation is defined by its very name (भावभिन्नः).

Negation. As the author has already stated its four kinds, he now goes on to define each of

them. 'Antecedent negation has an end but no beginning,' while 'Consequent negation or destruction has a beginning but no end.' The other two negations have neither beginning nor end. Thus the first two form one group of transient negations, the other two a second group of permanent ones. Antecedent and Consequent negations are spoken of with reference to a काल, the one representing the time before production, and the other representing the time after destruction. Thus प्रागभाव, काल and ध्वंस may be said to represent in order the three divisions of eternal time, past, present and future, of which the past (प्रागभाव) has no

beginning and the future (ध्वंस) has no end because time itself is eternal. Between these two divisions of eternity lies the कार्य which is limited both ways, namely, by creation at one end and by destruction at the other. But suppose a कार्य which has once been destroyed is reproduced; will not then its intermediate ध्वंस have been destroyed in its turn by the reproduction? The *Naiyāyika* answers, no; because the second कार्य, though production from the same materials, is distinct from the first. That which was destroyed was destroyed for ever, while the new production is one which never existed before. T. D. mentions three characteristics of प्रागभाव and ध्वंस each; both reside on the *intimate* or material cause of their प्रतियोगी, e. g. घटाभाव resides on सृत्परमाणु; they are respectively the cause and effect of their प्रतियोगी; and they are respectively the reasons why people say of a thing that 'it will be,' or that 'it is destroyed.'

2. *Absolute negation* is that which is eternal and has a प्रतियोगी determined by some connection *Absolute negation*. (with another thing), while *reciprocal negation* has a प्रतियोगी that is determined by the relation of identity of two things. 'The qualification त्रैकालिक (भूतभविष्यद्वर्तमानवृत्तिरित्यर्थः V. V.) distinguishes अत्यन्ताभाव from प्रागभाव and ध्वंस, while संसर्गावच्छिन्नप्रतियोगिकत्व distinguishes it from अन्योन्याभाव. The name अत्यन्ताभाव may be explained by the derivation अन्तमवधिमतिक्रान्तो नित्योऽभाव इति व्युत्पत्तिः । अत एवायामात्यन्तिकत्रैकालिक इत्यभिधीयते.

संसर्ग is the connection by which one thing may reside on another. Thus a घट resides on its अधिकरण the भूतल by संयोगसंबन्ध, while गन्ध resides in earth by समवायसंबन्ध, each of which is called संसर्ग. Now if a jar stands on any spot of ground we say घटवद्भूतलम्, by which of course we mean संयोगसंबन्धेन घटवत्, and hence even in such a case we are free to say that समवायसंबन्धेन भूतले घटो नास्ति. The jar stands on the spot by संयोगसंबन्ध, but not by समवायसंबन्ध; so that although भूतल is घटवत् by संयोग it is घटाभाववत् by समवाय. Here घट is the प्रतियोगी of भूतलनिष्ठ घटाभाव, not by संयोग but by समवाय; or more briefly the प्रतियोगिता of घट is समवायावच्छिन्न. Similarly although earth possesses odour by समवाय, the गन्ध may be said to be संयोगावच्छिन्नत्वेन प्रतियोगी of पृथिवीनिष्ठगन्धात्यन्ताभाव.

Whenever therefore an अत्यन्ताभाव of a thing is spoken of, it is always understood that the *absolute negation* is predicated of the अधिकरण by some particular संसर्ग. Hence अत्यन्ताभाव is defined as संसर्गावच्छिन्नप्रतियोगिताकः.

3. अन्योन्याभाव is distinguishable from अत्यन्ताभाव in having to depend on a different kind of संबन्ध. In the former a thing is प्रतियोगी of an अभाव residing in another by तादात्म्यसंबन्ध, and not by संयोग or समवाय as is the case with अत्यन्ताभाव. In simple language, when we speak of *absolute negation* we deny any connection between the प्रतियोगी on the one hand and the अनुयोगी, that is, the आधेकरण, on the other; in reciprocal negation we deny only the identity of the two. When we say भूतले घटो न, we only convey that they are not identical; but when we say भूतले घटो नास्ति, we mean something more; we convey that not only भूतल and घट are non-identical; but that they are not even connected together. अत्यन्ताभाव is the denial of a संसर्ग between two things; अन्योन्याभाव is the denial of their तादात्म्य. Thus if we say स्तम्भः पिशाचो न, we deny the identity of the ghost and the post; if we say स्तम्भे पिशाचो न we deny the existence of the ghost on the post. The nature of the अभाव is therefore determined by the form of the denial although the idea conveyed may be the same, पटे घटत्वं नास्ति and घटः पटो न both mean the same thing: but one is an अत्यन्ताभाव while the other is an अन्योन्याभाव.

4. S. C. divides अत्यन्ताभाव into two sorts, एकपर्याप्तधर्मावच्छिन्नप्रतियोगिताकः 'that whose प्रतियोगी is a property residing in one substance as घटत्वाभाव,' and अनेकपर्याप्तधर्मावच्छिन्नप्रतियोगिताकः that whose प्रतियोगी is a property jointly residing in many things as द्वित्वाभाव. But this is not the only division possible, for, as T. D. remarks, both अत्यन्ताभाव and अन्योन्याभाव will have as many kinds as the संसर्ग and the तादात्म्य of the प्रतियोगी will be various, although the प्रतियोगी itself remains the same.

5. The sentence in T. D., explaining the multiplicity of *absolute and reciprocal negations*, is even as corrected very obscure if not positively incorrect. It reads प्रतियोगितावच्छेदकरोप्यसंसर्गभेदादेकप्रतियोगिकयोरत्यन्ताभावान्योन्याभावयोर्बहुत्वम्. The sen-

Reciprocal negation distinguished.

Divisions of absolute negation.

An obscure passage in T. D.

tence will be intelligible if we take आरोप्य to mean धर्म or property. It will then mean 'that अत्यन्ताभाव and अन्योन्याभाव, though having one प्रतियोगी, are manifold owing to the variety (भेदात्) of the properties (आरोप्य) and connections (संसर्ग) that are respectively प्रतियोगितावच्छेदक in each case; that is, the number of अन्यो० depends on the variety of प्रति०-वच्छे०-धर्म, and that of अत्य० on the variety of प्रति०-वच्छे०-संसर्ग. *Nilakantha* interprets the sentence in the same way. The remark appears to have been copied from a passage in *Raghunātha Śiromani's* *Didhiti*, which, being more explicit, may be profitably compared with it. *Raghunātha* says एक-प्रतियोगिकयोरप्यत्यन्ताभावान्योन्याभावयोः प्रतियोगितावच्छेदकधर्म-प्रतियोगितावच्छेदकसंसर्ग-भेदाद्बहुत्वम् । तत्र प्रति० —संसर्गभेदादत्यन्ताभावबहुत्वम् । प्रति०—धर्मभेदादन्योन्याभावबहुत्वमिति योजना. ' An illustration will make all this clear. The अत्यन्ताभाव of केवल देवदत्त is distinct from that of दण्डविशिष्ट देवदत्त, because the प्रतियोगितावच्छेदक in one is केवलदेवदत्तसंसर्ग and in the other दण्डविशिष्ट-देवदत्तसंसर्ग. In अन्योन्याभाव there is no संसर्ग and therefore the तादात्म्य is considered with respect to properties (धर्म) residing on प्रतियोगी. Thus the अन्योन्याभाव of श्वेत घट is different from that of नील घट, because the प्रतियोगितावच्छेदक is नीलत्व in one and श्वेतत्व in the other case.

6. In conclusion T. D. notices some of the different views propounded in connection with अभाव. The *Vaiśeṣikas* recognize a fifth अभाव called सामयिकाभाव 'temporary absence' in such cases as इह भूतले घटो नास्ति. The घटाभाव exists on भूतल so long as घट is absent, and vanishes as soon as it is brought there; it is not therefore वैकालिक and so differs from अत्यन्ताभाव. *Annambhatta* includes it in अत्यन्ताभाव, for as a matter of fact घटाभाव resides permanently on भूतल while its occasional disappearance may be explained by its being covered by घट whenever the latter is present. A rule is therefore laid down that the अत्यन्ताभाव of घट, though नित्य, is manifested only when it is accompanied by either the प्रागभाव or प्रध्वंस of घटसंयोग on भूतल.

7. A writer named *Saundudopādhyāya* introduced a new kind of अभाव called व्यधिकरणधर्मावच्छिन्नाभाव in such examples as पटत्वेन घटो नास्ति, that is, घट does not exist on भूतल in

the form of घट although it may exist there as घट; but *Annambhaṭṭa* along with the majority of *Nyāya* writers considers it at the most a case of केवलान्वयि अनुमान and not a simple अभाव. As a matter of fact this variety of अभाव is recognized for dialectical purposes only and is of little use in practical life.

8. Opposed to the *Naiyāyikas* were the *Trābhākara* school of *Mīmāṃsukas* (followers of *Prabhākara* or *Guru*), who refused to recognize अभाव as a separate category existing apart from its अधिकरण. According to them and generally according to all the *Mīmāṃsakas* and *Vedāntins* अभाव is only अधिकरणकैवल्यमात्रम्, 'simple substratum and nothing more' T. D. rejects this view on the ground that it is impossible to determine what अधिकरणकैवल्य is. But if, says the *Mīmāṃsaka*, अभाव is a separate category, there will be अनवस्था, for as घटाभाव is different from घट, the अभाव of घटाभाव will differ from it, and so the number of अभावs will be infinite. To remove this objection, the ancient *Naiyāyikas* regarded the second अभाव i. e. घटाभावाभाव as identical with घट. The moderns however go one step further and regard the second अभाव as distinct from both घट and घटाभाव; but the अभाव of that, namely the third अभाव, was identified with the first घटाभाव, the reason being that an अभाव being a negation can be identical with an अभाव only and never with a भाववस्तु like घट. *Annambhaṭṭa* appears to favour the ancient view.

SECT. LXXXI. उपसंहारः.

As all things are included severally in those enumerated, it is proved that there are only seven categories.

1. The author concludes his Compendium of Seven Categories by showing that all the other *padārthas* mentioned by *Gotama* as well as other writers are included in some one of the seven enumerated at the beginning of this book, *Gotama's* first aphorism which is quoted by T. D.

The seven-fold enumeration is exhaustive.

contains a list of sixteen *padārthas* recognized by the *Naiyāyikas* proper, namely, प्रमाण (Proof), प्रमेय (Object of knowledge), संशय (Doubt), प्रयोजन (Motive), दृष्टान्त (Instance), सिद्धान्त (Conclusion), अवयव (Premise), तर्क (*Reductio ad Absurdum*), निर्णय (Determination), वाद (Disquisition), जल्प (Controversy), वितण्डा (Cavil), हेत्वाभास (Fallacy), छल (Perversion), जाति (Self-contradiction), and निग्रहस्थान (Refutation). T. D. then briefly explains each of these and its subdivisions. All these are not properly speaking categories but only so many topics that require to be attended to in a disputation with an antagonist. Gotama's 16 topics which are meant for dialectical purposes are therefore in no way irreconcilable with the seven *Categories* of *Kaṇāda* which are metaphysical. There are however some other things recognized as separate *padārthas* by other systematists, but they also fall under the seven mentioned in this book. For instance, शक्ति (*Power*) and स्वत्व (*Ownership*), says T. D., are not independent categories as some have supposed. The *power* of burning which resides in fire is not different from fire, while the *power* of ashes to cleanse metals is also not distinct from the washing away of those ashes, after they have purified the metal. स्वत्व or *ownership* is only the capability of a thing for being disposed of just as one pleases, and is therefore nothing but a quality of the thing. सादृश्य (*Resemblance*) has also been supposed by some to be a distinct *padārtha*; but *Viśvanātha* answers: सादृश्यमपि न पदार्थान्तरं किं तु तद्विभक्तत्वे सति तद्गतभूयोधर्मवत्त्वम्. यथा चन्द्रविभक्तत्वे सति चन्द्रगताल्हादकत्वादित्येव मुखे चन्द्रसादृश्यम् ।¹

2. The last paragraph of T. D. begins with a curious disquisition on the meaning of the Potential form, यजेत, जुहुयात् etc., which is usually employed in Vedic injunctions, but it is rather difficult to see how the topic is relevant in a book on *Nyāya*, unless of course it is intended to show that the *Nyāya* system, although differing considerably from the exegetical school of *Mīmāṃsakas*, is not really inconsistent with the unquestioned authority of the *Vedas* and has its own method of interpreting Vedic texts. विधि, according to *Gotama*, is

What is an injunction.

What is an injunction.

a विधायकवाक्य, 'a text which enjoins some act upon men.'¹ Vedic texts are either विधि (Injunction), अर्थवाद (Statement of a fact) or अनुवाद (Repetition), of which विधि is the principal and the other two only subsidiary to it. *Injunction* is of two kinds, नियोग (Command) such as अग्निहोत्रं जुहुयात् स्वर्गकामः, or अनुज्ञा (Permission) such as ज्योतिष्टोमेन स्वर्गकामो यजेत, the difference between the two being that the first enjoins a नित्यकर्म which entails sin if omitted, while the second prescribes only a काम्यकर्म which may or may not be performed. *Annambhatta's* definition of विधि is "a sentence which conveys knowledge that prompts a desire for action which in its turn produces effort." The second of the above texts for instance prompts a यजमान to perform a ज्योतिष्टोम, and then he makes preparations for the ceremony. But one might ask how can ज्योतिष्टोम be the cause of the attainment of heaven to the यजमान since a cause must be फलायोगव्यवच्छिन्न, 'immediately preceding the effect,' while in this case the end of the sacrifice and its फल, viz. the attainment of heaven (which can take place only after the death of यजमान), may be separated by considerable lapse of time? To remove this difficulty and establish a connection between the cause ज्योतिष्टोम and the फल स्वर्ग, a व्यापार is assumed in the interval, called अपूर्व.

3. Although the *Naiyāyika* accepts the efficacy of Vedic rites as befits every orthodox systematist, he does not depend upon them exclusively. The attainment of heaven by means of the Vedic rites is not according to him the true goal of man. The end and aim of philosophy, says T. D., such as the knowledge of the seven *pradārthas*, is Salvation, which consists in recognizing the self as distinct from body and other material things. This is laid down in the celebrated text, "Oh Maitreyi, the Self should be perceived, heard, considered and contemplated upon."² *Gotama* defines निःश्रेयस or अपवर्ग as आत्यन्तिकी दुःखनिवृत्ति 'eternal cessation of pain,' while *Kaṇāda* declares that मोक्ष or salvation consists in the separation of the soul from the former body, not followed by its union with another owing to the absence of

1 G. S. II, 1, 62.

2. आत्मा वा अरे द्रष्टव्यः श्रोतव्यो मन्तव्यो निदिध्यासितव्यो मैत्रेयि । *Bṛih. Ar. Up.*, IV, 4.5.

अदृष्ट." ¹ According to both, *salvation* consists not in any kind of positive pleasure as the *Mīmāṃsakas* think, but in the complete and eternal cessation of all pain. This can be attained by right knowledge alone, as is distinctly said in the *Śruti*, तमेव विदित्वातिमृत्युमेति नान्यः पन्था विद्यतेयनाय.² कम, i. e. the *Vedic* rite, does not directly lead to *salvation* as the *Mīmāṃsakas* suppose; but it only prepares the ground for the attainment of knowledge by destroying sins and purifying the soul. When this knowledge is digested by constant contemplation, it ripens and leads to कैवल्य. This process is described in *Gotama's* second aphorism, दुःखजन्म-प्रवृत्तिदोषमिथ्याज्ञानानामुत्तरोत्तरापाये तदनन्तरापायादपवर्गः.³ Of the five things, pain, birth, effort, faults and erroneous knowledge, the destruction of the subsequent leads to the destruction of the immediately preceding, and so ultimately the *salvation* follows. The destruction of मिथ्याज्ञान causes the removal of various दोषs such as राग, द्वेष etc. When these are removed effort also ceases, for no desire is left to induce प्रवृत्ति. Cessation of प्रवृत्ति necessarily stops जन्ममरणपरम्परा; for प्रवृत्ति having ceased, no action is done and no अदृष्ट which is the cause of जन्म is produced. When the series of births ends, it is necessarily followed by the cessation of pain, for then the soul is for ever freed from the body which is the seat of pain. Finally complete cessation of pain brings on *salvation*, which is the ultimate goal of all true philosophy. The proper way to attain *salvation* is therefore to attack the very beginning, namely, मिथ्याज्ञान which lies at the root of all our misery. This मिथ्याज्ञान consists in the erroneous identification of the soul with our body and with material objects. Cognitions such as अहं सुखी, अहं दुःखी are all products of such wrong identification. It is the purpose of true *Śāstra* therefore to destroy this मिथ्याज्ञान by imparting सत्यज्ञान. This true knowledge is the correct knowledge of the seven categories, for it is only by knowing these accurately that one can discriminate them from the eternal and transcendental Soul. To give a right knowledge of *padārthas* is therefore the प्रयोजन of this *Śāstra*. The

1. *Viṣvanatha*: V. S. *Vṛitti* II, 18.

2. *Svetāśvatara Up.* VI. 15.

3. *Ā. S.* I, 1, 2.

necessity for inculcating this प्रयोजन arises from our common experience as expressed in the maxim प्रयोजनमनुद्दिश्य न मन्दोऽपि प्रवर्तते which is as true in the case of acquisition of knowledge as in other walks of life. All systems of Indian philosophy open with an enunciation of अनुबन्धचतुष्टय, the four requisites of every Śāstra, and प्रयोजन or purpose, which is one of them, is invariably stated to be the तत्त्वज्ञान, the knowledge of reality, leading to salvation. Ancient Hindu philosophers may fight with one another on almost every point, but in one respect they agree among themselves and differ from the votaries of other religions, viz. in holding that it is *knowledge of truth* and not blind faith in a revelation or a Saviour that is the road to salvation. Even the religion of *Bhakti* which spread through and permeated popular thought in India in later times under Mahomedan influence was based on the solid principle of तत्त्वज्ञान. The doctrine of ज्ञानान्मोक्षः is in fact the corner-stone of all the philosophical systems of India.

Appendix A.

Meaning of *Avacchedaka*.

Nothing is more difficult for a beginner than to understand the exact sense of the term *Avacchedaka* and its varieties which occur so frequently in *Nyāya* writings. The following Note on the meaning of the word appended to Cowell's translation of *Udayanācāryā's Kusumāñjali* will therefore be found useful :—

“ The term *Avacchedaka* has at least three meanings, as distinguishing, particularizing and determining.

a. In the phrase ‘ a blue lotus,’ ‘ blue ’ is the distinguishing *Avacchedaka* (i. e. *Viśeṣaṇa*) of the lotus ;—it distinguishes it from others of different colours.

b. In the sentence ‘ the bird sits on the tree on the branch ’ (वृक्षे शाखायां पक्षी), *śākhāyām* particularises the exact spot—this is the *ekadeśāvacchedaka*.

c. But the third is the usual *Naiyāyika* use of the word i. e. as determining (*niyāmaka*). Wherever we find a relation which is not itself included in any one of the seven categories but is common to several, we require something to determine its different varieties ; thus if we say that fire is the cause of smoke, or *vice versa* smoke the effect of fire, we do not mean only this particular case but any fire or smoke ; we therefore require, to determine this particular relation of causality, something which shall be always found present with it. Thus in ‘ fire is the cause of smoke ’ it will be *vahnitva*, the species of all fires. This will always be found present wherever the causation of smoke is found, and it is therefore called the *dhūma-kāraṇatāvacchedaka* as *dhūmitva* would be the *vahnikāryatāvacchedaka*. If we have several causes or effects (as e. g. green wood in the case of smoke), each *kāraṇatā* or *kāryatā* will require its own *avacchedaka*. But we could not say that ‘ substance ’ is the *avacchedaka* of ‘ quality ’, although it does always accompany it, because quality is a category by itself and common to several. An *avacchedaka* is always required for such relations as *kāraṇatā*, *kāryatā*, *śakyatā*, *jñeyatā*,

pratiyogitā, etc. Thus *gotra* is the *avacchedaka* of the *go-śabda-śakyatā* as otherwise the word *go* might be restricted to mean only this particular cow, or extended to include every animal ; and in वह्न्यभावस्य प्रतियोगी वह्निः, we have *vahni-tva* as the *avacchedaka* of the *pratiyogitā*. This determining notion need not be always a species ; this in कार्यस्य जनक-श्रेष्ठवान्, *cheṣṭā* is the *avacchedaka* of *kāraṇatā*, and *cheṣṭā* is included in the category of ' action. ' (Cowell : *Kusumāñjali* of *Udayanācūrya*, p. 26).

Appendix B.

The following lists of all the known commentaries on *Annambhaṭṭa's Tarka-Saṁgraha* and *Tarka-Dīpikā* are compiled from Aufecht's *Catalogus Catalogorum*, Bhīmācārya's *Nyāya-kośa*, Hall's *Bibliographical Index of Indian Philosophical Systems* and other sources. Letters in brackets indicate the copies consulted, for which see Appendix C.

I. Commentaries on तर्कसंग्रह.

- १ तर्कसंग्रहदीपिका or तर्कदीपिका by the author of T. S. himself, printed at various places.
- २ न्यायबोधिनी by गोवर्धनामिश्र, printed by N. S. Press at Bombay.
- ३ सिद्धान्तचन्द्रोदय by श्रीकृष्णधूर्जटिदीक्षित, printed at Benares.
- ४ पदकृत्य by चन्द्रजसिंह, printed by N. S. Press at Bombay.
- ५ तर्कसंग्रहतत्त्वप्रकाश by नीलकण्ठ ; this is perhaps नीलकण्ठी.
- ६ निरुक्ति or पट्टाभिरामटिप्पणी by पट्टाभिराम or माधवपदाभिराम, printed in 1915 at Madras (W.)
- ७ तर्कसंग्रहवाक्यार्थनिरुक्ति or निरुक्ति printed in 1915 at Madras (W.)
- ८ तर्कसंग्रहचन्द्रिका by मुकुन्दभट्ट गाडगीळ, printed by N. S. Press at Bombay.
- ९ तर्कसंग्रहव्याख्या or वाक्यवृत्ति by मेरुशास्त्री गोडबोले, printed in 1915 at Madras (W.)
- १० तर्कसंग्रहटीका by अनन्तनारायण.
- ११ तर्कफक्किका by क्षमाकल्याण.
- १२ न्यायार्थलघुबोधिनी by गोवर्धनरङ्गाचार्य.
- १३ तर्कसंग्रहटीका by गौरीकान्त.
- १४ निरुक्ति by जगन्नाथशास्त्रिन.
- १५ न्यायबोधिनी by शुक्लरत्ननाथ.

- १६ त. सं. टीका by रामनाथ.
 तर्कसंग्रहतरङ्गिणी by विन्ध्येश्वरीप्रसाद.
 १८ त. सं. टीका by विश्वनाथ.
 १९ तर्कचन्द्रिका or प्रभा by वैद्यनाथ गाडगीळ.
 २० त. सं. टीका by हनुमान्, son of व्यास.
 २१ त. सं. व्याख्या by मुरारि.
 २२ तर्कसंग्रहोपन्यास; author unknown.
 २३ तर्कसंग्रहटीका; author not known.
 २४ तर्कसंग्रहशङ्कु; ditto.
 २५ न्यायचन्द्रिका; ditto.

II. Commentaries on तर्कदीपिका.

१ तर्कसंग्रहदीपिकाप्रकाश or नीलकण्ठप्रकाशिका by नीलकण्ठशास्त्रिन्, author of तत्त्वचिन्तामणिदीधितिटीका. This is again commented on by रामभद्रभट्ट. It is printed at Bombay, Benares and Madras.

२ रामरुद्रीयम् by रामरुद्रभट्ट, printed at Madras (W).

३ नृसिंहप्रकाशिका or नृसिंहीय by राय नरसिंह printed at Madras (W).

४ पट्टाभिरामप्रकाशिका ends abruptly at वायु, printed at Madras (W).

५ भास्करोदया, a commentary on नीलकण्ठी by लक्ष्मीनृसिंह, son of नीलकण्ठ, printed by N. S. Press at Bombay. (R)

६ तर्कफक्किा by क्षमाकल्याण, pupil of जिनलभसूरि who wrote his commentary on both T. S. and T. D. in 1772 A. D.

७ सूरतकल्पतरु by श्रीनिवास.

८ टीका by गङ्गाधरभट्ट.

९ टीका by जगदीशभट्ट.

१० तत्त्वार्थदीपिका by बाधूलवेङ्कटगुरु.

Appendix C.

The present edition of the *Tarka-Saṅgraha* and its two commentaries is based on the following copies. Of these fourteen twelve are printed or lithographed editions, and the rest were Mss. Out of these, twelve give the text of *Saṅgraha*, eleven of the *Dīpikā* and eight of the *Nyāya-Bodhinī*. In some cases the same copy gives both the original and either of the two commentaries, while the one marked C contains all the three. These have been marked as one. The following

conspectus will give an idea of the varied character of the editions and Mss. consulted :—

Tarka-Saṃgraha.

- A**—*Tarka-Saṃgraha* with *Dīpikā* (3rd ed.), carefully edited by the late Mr. K. P. Parab and printed at the Nirnaya-sagar Press, Bombay.
- B**—The text of *Saṃgraha* alone, printed in Ballantyne's *Lectures on Nyāya Philosophy* (Allahabad 1849).
- C**—A lithograph edition of *Saṃgraha*, *Dīpikā* and *Nyāya-bodhinī*, with different paging for each and belonging to the Jeypur library. It is very carelessly printed. A portion of the *Saṃgraha* from the 28th to the 31st section inclusive, as well as the concluding paragraph of the *Dīpikā* and the portion of *Nyāya-bodhinī* after शब्दपरिच्छेद are missing. However it generally gives correct readings and proved useful in disputed places. It was obtained from the late Pundit Durga-Prasad of Jeypur.
- D**—An oblong edition of *Saṃgraha* with the commentary *Siddhānta-Candrodaya* by Śrīkrṣṇa Dhūrjati Dīkṣita printed at Benares in 1881. It is carefully edited and proved a useful guide, chiefly owing to the commentary which is copious, though not always accurate.
- E**—An oblong edition of *Saṃgraha* with the commentary *Vākya-Vṛtti* of Meru Śāstri printed at Poona in 1873. Its value consists entirely in the commentary.
- F**—An annotated edition of *Saṃgraha* and *Dīpikā* by Mr. K. C. Mehendale B. A. This, although professing to be based on two or three Mss., does not materially differ from the Nirnaya Sagar edition. A second edition of this has been published in 1908 with the addition of a new Sanskrit commentary by Pandit Bhavānīshankar Shastri.
- G**—A Ms. containing the *Saṃgraha* and the *Dīpikā* obtained from the library of Baroda Saṃskṛt Pāṭhaśāla. It gives important variants in several places, especially in the *Dīpikā*, which are not to be found in other copies. It closely agrees with J, and seems to have

been copied either from it or from some common original. It bears no date.

H—Ms. containing *Saṃgraha* only obtained from Ratnagiri. It was copied at Benares in Samvat 1820. It varies pretty often from the usual text, but the readings are not generally happy.

J—A Ms. of *Saṃgraha* and *Dīpikā* belonging to Dr. H. Jacobi of Bonn, Germany. It is undoubtedly the oldest and also the best authority. It is very clearly written and contains many marginal corrections in at least two hands. The *Saṃgraha* and the *Dīpikā* are paged differently and have different colophons. The colophon at the end of the *Dīpikā* is inserted in our edition (p. 67 *supra*); while that of the *Saṃgraha* runs thus:— इति श्रीतर्कसंग्रहाभिधानो ग्रन्थः समाप्तमगमत् । सांबशिवो जयतु । श्रीरस्तु । सवत् १७७० वर्षे कार्तिकशुक्लपञ्चम्यां लिखितोऽयं ग्रन्थः । शुभमस्तु ॥ It arrived after the work of collation of the 1st edition was completed, but just in time to allow its *varietas lectionis* being incorporated in the footnotes. Fortunately except in one or two instances no alterations were needed, as the readings already selected were found to agree with those in **J**. In several cases many doubtful readings and conjectural emendations of mine were unexpectedly confirmed by this Ms., a fact which is perhaps the best proof of the correctness of the readings adopted. My hearty thanks are due to Dr. Jacobi for lending his copy for use, and also to Mr. B. G. Tilak of Poona who procured it for me.

K—This is an old closely written Ms. containing the *Saṃgraha* and the *Nyāya-Bodhinī* and obtained from Miraj. It possesses great value and has been mainly relied upon for the text of the *Nyāya-Bodhinī*.

Tarka-Dīpikā

Besides **A**, **C**, **F**, **G**, and **J** already described, three printed and two Ms. copies of the *Dīpikā* were available, namely:—

L—An old and badly written Ms. of *Dīpikā* obtained from the Library of the late Bālaśāstri Āgāse of Ratnagiri. It seems to have been copied at Benares in Samvat 1790

by one Viśvanātha Joshi, son of Gopal. It is written in several hands and is often incorrect.

M--A fine and very carefully written Ms. of *Dīpikā* obtained from Barhanpur. It often differed from other copies, and although its variants had sometimes to be rejected it was useful for comparison.

N--An oblong edition of *Dīpikā* with the well-known commentary of *Nilakanṭha*, printed at Benares in 1875. It contains several additions which were not found in any other copy and which had therefore to be rejected. *Nilakanṭha's* commentary however proved a valuable aid in judging the correctness of a reading, inasmuch as it generally gives the best reading and sometimes notices other variants.

P--An oblong edition of *Dīpikā* only, printed at Jagadīśvara Press, Bombay. It generally agrees with **A** and was not of much use.

Q--An edition of *Saṃgraha*, *Nilakanṭha's Prakāśa* and a commentary thereon named *Bhāskarodayā* by *Nilakanṭha's* son *Lakṣmī-nṛsiṃha*, edited by Pandit Mukunda Jha and printed by Nirnayasagar Press, Bombay.

Nyāya-Bodhinī.

Besides **C** and **K** already described, four printed, and two Ms. copies of *Nyāya-Bodhinī* were consulted, viz:—

R--A Ms. of *Nyāya-Bodhinī* only, written carelessly and often incorrectly. It was kindly lent by the late Mr. N. B. Godbole, B. A. of the Poona Training College. It was copied on the 13th of Āśāḍha, Vadya, *Saṃvat* 1907, and generally agrees with **C**.

S--A lithograph edition of *Nyāya-Bodhinī* printed at Benares in 1875. The editor seems to have made no attempt at collation. It contains many sentences and even long passages extending to a page or more which are not found in any of the other Mss. consulted by me. These additions appear to be interpolations, consisting of explanatory paraphrases of the original short sentences, which are sometimes retained and sometimes omitted.

- T:**—This appears to be a reprint, and a very incorrect one too, of the last preceding, printed at Benares in 1881.
- U:**—An edition of *Saṃgraha* and *Nyāya-Bodhinī* with annotations called *Padakṛtya*, printed by Nirnaya-Sagar Press, Bombay.
- V:**—A Ms. of *Nyāya Bodhinī* kindly lent by Pandit Bādinātha Śāstrin of Baroda. It generally agrees with **B**, **R** and **C**, and was useful for ascertaining the correct reading whenever the other copies differed hopelessly. It sometimes gives its own variants. It ends at सामान्य and bears no date.
- W:**—An edition of *Saṃgraha* and nine Commentaries edited and published by Pandit Chandraśekhara Śāstrigal of Myslapore, published in 1915 at Madras.
- X, Y and Z:**—These three Mss. were kindly lent to me by Pandit Bālāchārya Gajendragadkar of Satara to whom I am highly obliged for the loan. One of these, **X**, containing the *Saṃgraha* bears the date Śake 1720. The other two, **Y** and **Z**, contain the text of the *Dīpikā*. They mostly agree with **G** and **J** and are chiefly valuable for having been corrected under the superintendence of the late learned Anantācārya Gajendragadkar.

Most of the Mss. and editions of *Saṃgraha* and *Dīpikā* mentioned above belong to Northern India or the Deccan. As *Annambhaṭṭa* was a resident of Carnatic, Mss. from that quarter would have proved very valuable guides, but **W**, which is an elaborate edition of *Saṃgraha* and Commentaries by a learned Pandit of South India, has largely supplied the desideratum. The copies already consulted belong to different ages and distant provinces, and hence the text of *Annambhaṭṭa*'s two works may for all practical purposes be taken as settled. It is to be regretted that the same cannot be said of the *Nyāya-Bodhinī*. Only a few copies of this work were available, and they varied among themselves so much and sometimes so hopelessly, that it was often impossible to ascertain the correct reading. Sentences and even whole passages are read differently in different Mss. and the work of collation was most difficult in several places. The defects can be cured only when more trustworthy Mss. are available.

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