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AUTHOR Fenson, Larry  
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ABSTRACT

This paper traces a father's observations of the development of one child's drawing for a 15-month period beginning when the child was 3 years, 5 months old. Observations of nearly 400 drawings yielded the following generalizations: (1) drawing is symbolic almost from the beginning; (2) appreciation of the representational nature of drawing in the "scribbling" stage requires observation of the creative process; (3) the child's drawings were composed of recognizable routines (such as ovals, squares, and sunbursts) and strategies (such as filling in all open forms); (4) the combination of subroutines and strategies created a distinctive "style"; and (5) changes were largely attributable to the waxing and waning of specific subroutines and strategies rather than to general cognitive growth, suggesting that the child's drawing was more reflective of the development of a performance system than of a knowledge system. (Author/JMB)

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The Structure of One Child's Art From  
Ages Three to Four<sup>1</sup>

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This paper traces the course of development of one child's drawing over a 15 month period, beginning when the child was 3 years, 5 months old. At that time he was just beginning to develop interest in graphic expression. During the 15 month period that followed, he produced over 400 drawings, about 95% of which were witnessed by the writer (who is the child's father). The experience provided a unique opportunity for "on line" observation of the early development of an interesting symbol system-- that of graphic representation.

It soon became clear that there was much structure in the child's drawings even during the so-called "scribbling" stage, but that full appreciation of the structural features required observation of the evolution of individual drawings as well as a longitudinal perspective across drawings. Trying to decipher the child's intent and method by studying the finished products was rather like trying to understand early play by examining the playroom after the child departs. In both case what you frequently observe is a shambles. In each case there are usually tell-tale signs as to what transpired, but these clues are more meaningful if you have witnessed the evolution of the final product.

Let me now describe successive developments in Randy's artistic endeavors in the order in which they occurred. Here are the first two pictures Randy drew the first night of this "project" (Figs. 1 and 2). My reaction was "Good, not much has happened yet." But only a few days later, he drew this (Fig. 3). It doesn't look like much but as he worked on it, he

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described in detail what he was doing. I have noted on the drawing the various parts of his "person" as he labeled them.

One is not likely to have decoded these "hieroglyphics" solely by studying the finished product. The next two pictures show further instances of symbolism during this early stage. Figure 4 portrays a rabbit gathering nuts while Fig. 5 was described by Randy as a girl with strawberries in her hair. Fortunately, at this point in time, I assessed Randy's manual skills with magic markers and paper by asking him to copy some numbers and shapes (Figs. 6-9). These attempts probably reflect an inability to copy, as much as they do limited manual control. But the assessment proved to be a useful probe as will be seen when a similar assessment was carried out 12 months later.

The next two pictures show that, in addition to symbolic intent, these early drawings also contained some structure. Fig. 10 is a person (drawn at my suggestion) composed primarily of circles and ovals. Fig. 11 is a traincar, again composed of oval-like forms. The wavy line represents the track. Thus it began to appear that, although manual skill was limited, Randy frequently exercised a good deal of care in his drawing. His scribbles were not random. Instead he seemed to have in his repertoire a limited number of simple structural units such as circles, ovals, and lines that he used to construct his drawings. I began to call the simple units subroutines after Bruner's description of how various action patterns develop and become linked together in early infancy (Bruner, 1969).

After this early experimenting with pictorial themes, Randy seemed to become more interested in the subroutines themselves and practiced them

over and over, especially ovals, squares, and sunbursts, which he would frequently color in fully after completing the outline (e.g., Figs. 12-15). Fig. 16 is a drawing of special significance drawn approximately 4 months after the initiation of the project. It is, I would submit a train track-sunburst-circle-person. That is, it was constructed out of various subroutines already present in Randy's repertoire. Figure 17 is a similar variant drawn a month later. The relation to Bruner's subroutines becomes more obvious.

In addition to these subroutines, Randy also engaged in what I have called strategies. The first strategy to appear was filling in, as illustrated in Figs. 12, 13, and 15. Another was enclosure as illustrated by Fig. 18 which depicts a flower garden within an enclosure and by Fig. 19, in which a sunburst is enclosed.

We turn now to some interesting new developments. Fig. 20 was drawn by Randy's older brother Brett, who is 3 years older. Randy picked it up the next morning, added the wavy hair, and then proceeded to draw Figs. 21, 22, and 23. They are all in a sense beyond his developmental level, as judged from his prior and subsequent figure drawings. They are in fact semicopies. I believe that the reason he was able to copy his brother's drawing (a task which he normally was not able to accomplish) is that he was able to analyze the drawing in terms of components or subroutines within his repertoire. That is, Randy did not at this point sketch his drawings-- he constructed them. Copying normally requires sketching. In the case of Figure 20, however, he apparently was able to recognize subroutines familiar to him. A further point: notice the hands and fingers drawn by Brett in Fig. 20 and Randy's "copies" in Figs. 21-23. I have not said anything at this point about the origins of the various subroutines and strategies.

They seemed to emerge from several different sources. Circles, e.g., seemed to derive at least in part from natural arm movements. Some were probably discovered by accident. Still others seemed to be clearly imitative in origin, as in the present case of the fingers and hands. As Fig. 24, which was drawn five days later shows, Randy became intrigued with this new routine. It is a good example of what Piaget calls functional assimilation or practicing new schemes. But there is still a further message in this drawing. It looks suspiciously like an enclosure man, i.e., use of the enclosure theme to create a person. Fig. 25 is another variation on this theme. The circle in the center is the belly button. Fig. 26, drawn on the same day, is entitled "How I was born". The outside enclosure is mommy's tummy and the inside oval is the egg, with cracks drawn in it. Fig. 27 shows still another strategy, named partitioning. A substantial number of variations of this theme were explored over a 3.5 month period. Fig. 28 appears to be a combination of the partitioning strategy with the sunburst subroutine.

Sometimes, rather long lapses of time passed during which Randy did no drawing. When he resumed, his initial drawing would often incorporate new elements. Fig. 29, e.g., followed a break of two months and looks rather different from any previous drawing. Nonetheless, the continuity in his drawings across weeks and even months remained very pronounced and very impressive. He tended to retain the subroutines and strategies that defined his own unique style.

Fig. 30 is an interesting figure done at 4 years, 4 months. It is a man carrying two suitcases. This is the first time to my knowledge that Randy drew a person doing something. It constitutes the first of several new developments that do not seem accountable for in terms of simple improvements in skill. To this point, successive developments in Randy's drawing

seemed accountable for in terms of the emergence of new subroutines and strategies and combinations thereof.

Improvements in manual skill is shown clearly by Randy's attempt to copy the forms shown in Figs. 31-33. However, performance factors cannot account for the new development portrayed by Fig. 30 nor can they account for the developments shown by Figs. 34-36. Fig. 34 shows two specific people (mommy and daddy), both with bodies, Fig. 35 shows two people inside a house, and Fig. 36 shows a train, a train station, and a train track encircling the station. These last two pictures are particularly noteworthy in that Randy could have drawn these scenes some months ago, i.e., he possessed the manual skill to do so. But I'm suggesting that the depiction of integrated scenes such as these had to await further mental growth. In a manner of speaking, it did not occur to him previously to try to depict an integrated scene. It is important to note that the attribution of a higher level of mental functioning as the basis for these recent drawings is not based on the precision of the drawings nor on factors like the amount of detail they contain but rather on the thematic complexity of the drawings. To give an analogy, the child who linguistically is at the single word stage has the motor skill to utter two or three word sentences but is limited by cognitive factors. I'm suggesting a similar phenomenon here. There are in fact, some interesting parallels between art and language. The subroutine seem similar to phonemes. They are, respectively, the building blocks of pictures and words and these recent integrated themes seem similar to sentences or even paragraphs.

Some final comments. It remains to be seen whether the above account of one child's early artistic expression has applicability to the evolution of children's art in general. I suspect that the extent to which drawing



represents the evolution of a performance system as opposed to a knowledge system (as was the case for Randy's drawing for almost 12 months following his initial attempts at drawing) is largely dependent upon the time at which the child begins to explore this medium. Exploration of subroutines and strategies would be less likely by a child who had little opportunity to draw until age 5 or 6. But a similar statement might be made for a child who, for whatever reason, had no opportunity to talk until 5 years. In any event, the above stands as a rather complete documentary of one child's initial exploration of graphic expression.

References

Bruner, J. Competence in infants. Unpublished manuscript, 1969.

Footnote

<sup>1</sup>This paper was presented at the Society for Research in Child Development, New Orleans, March, 1977. The author wishes to acknowledge the intellectual interaction with Sheldon White and with Howard Gardner that allowed him to recognize a worthwhile opportunity when the occasion presented itself, and his gratitude to Jerome Kagan who made it all possible.



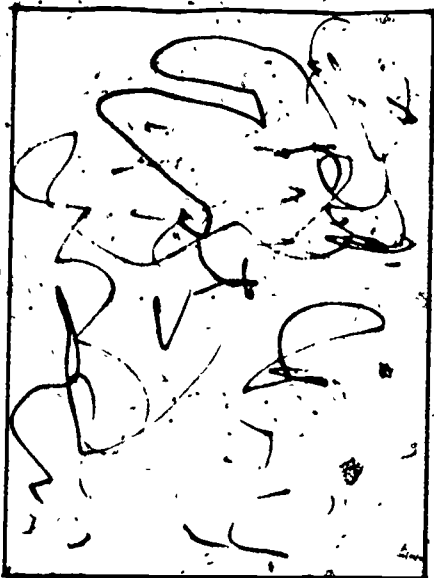


Fig. 1



Fig. 2



Fig. 3

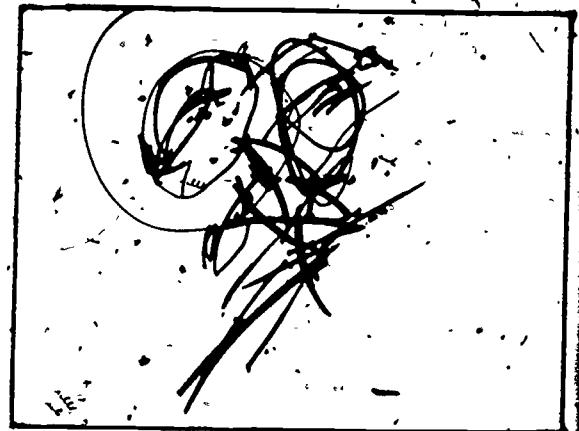


Fig. 4

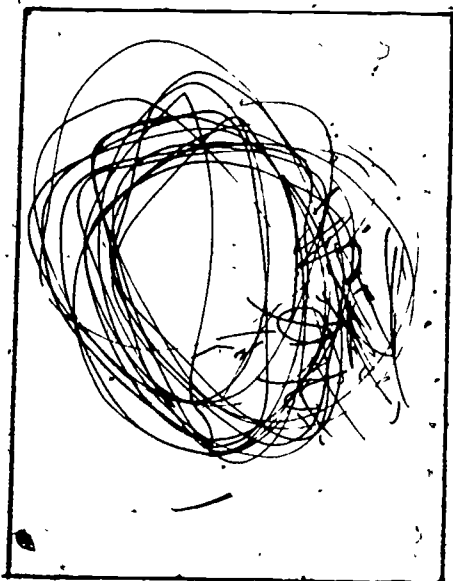


Fig. 5

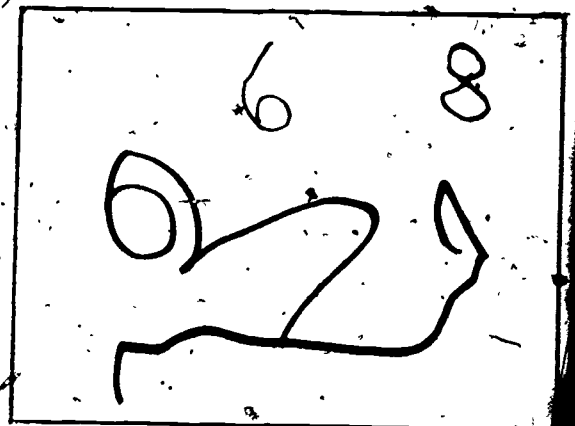


Fig. 6

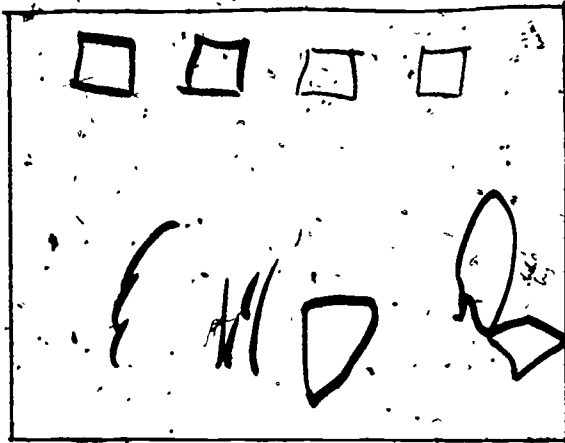


Fig. 7

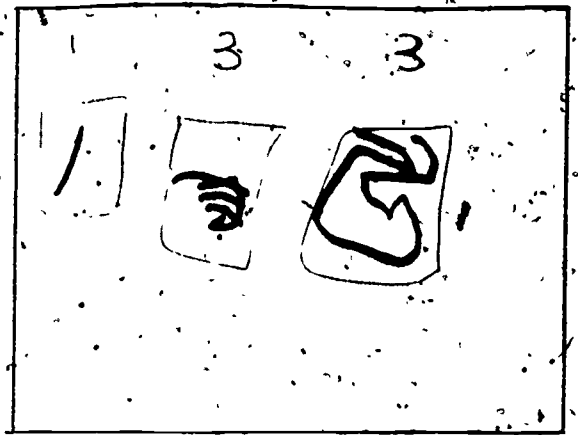


Fig. 8

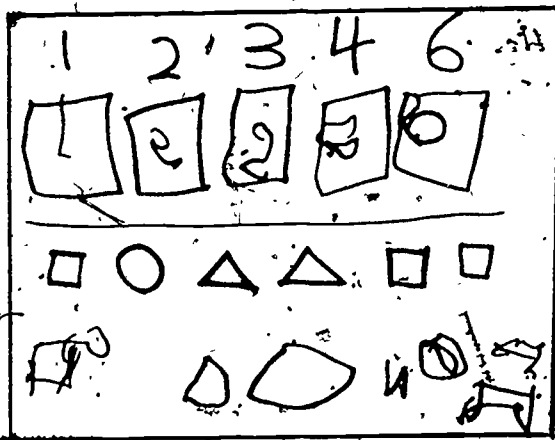


Fig. 9

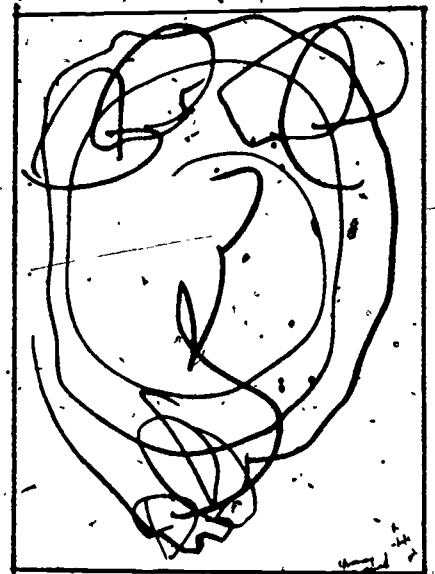


Fig. 10

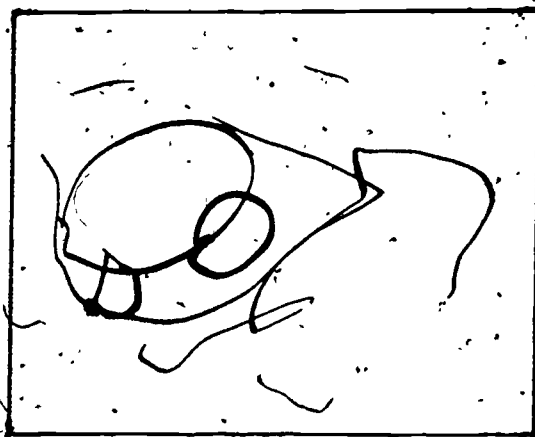


Fig. 11

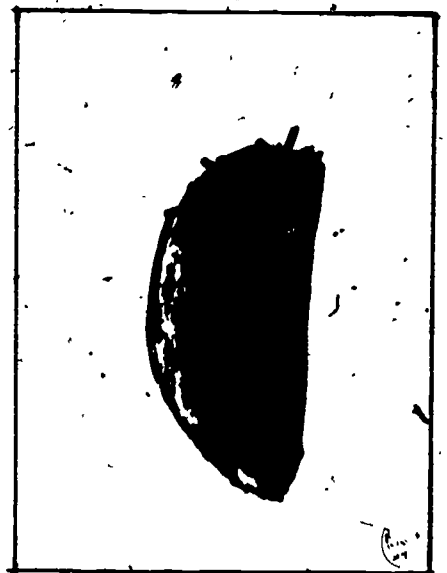


Fig. 12

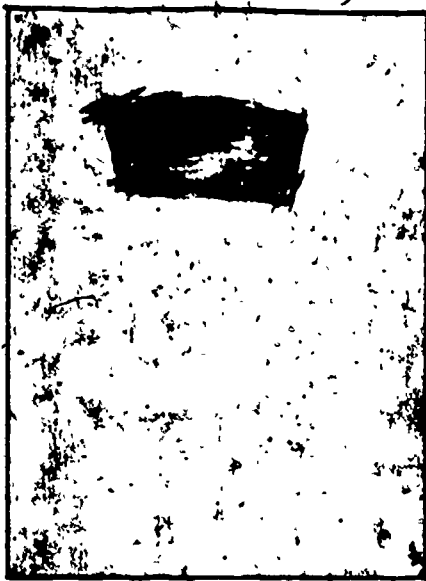


Fig. 13

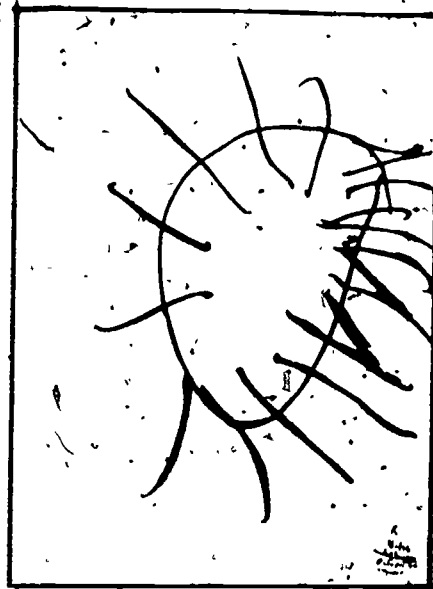


Fig. 14

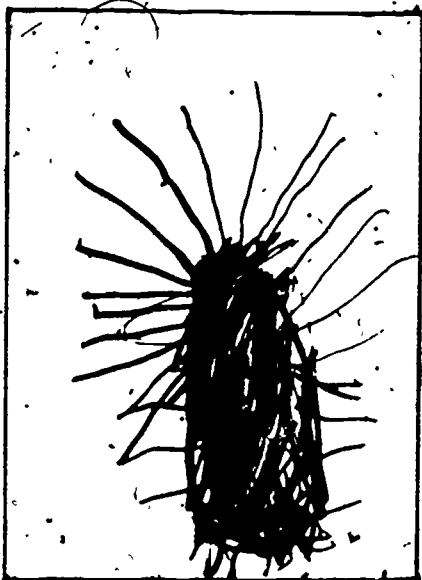


Fig. 15

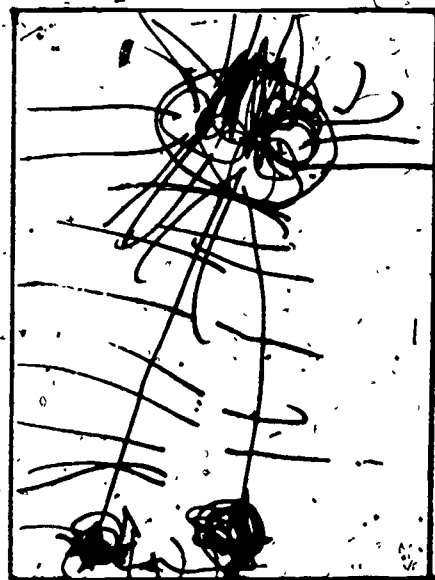


Fig. 16

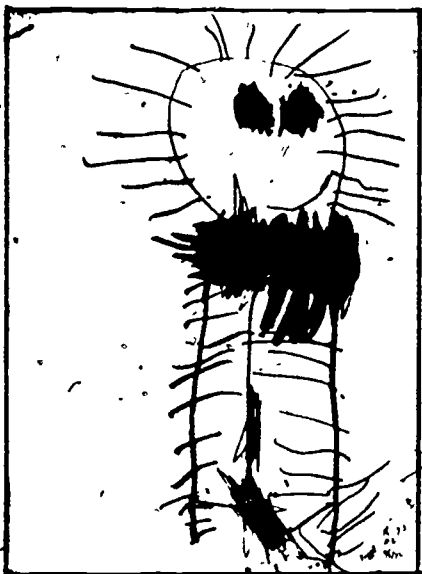


Fig. 17

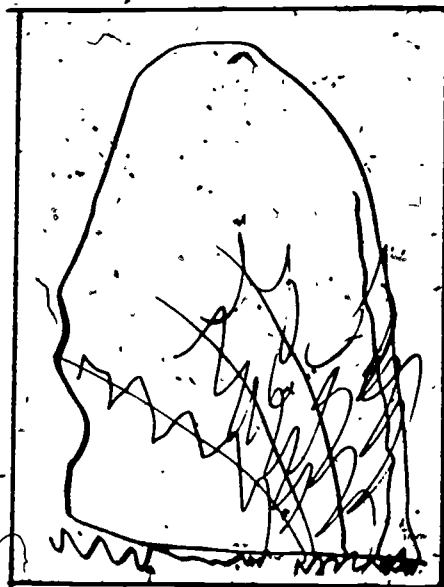


Fig. 18

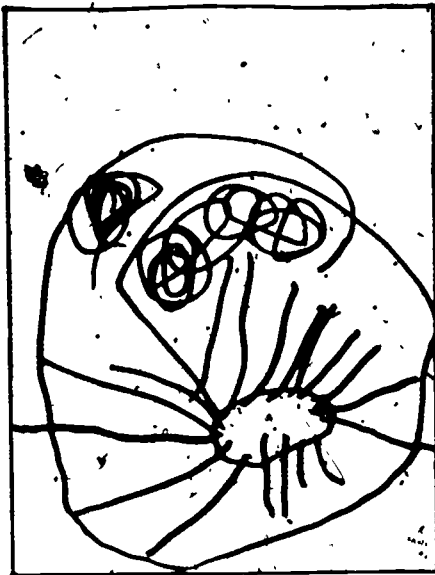


Fig. 19



Fig. 20

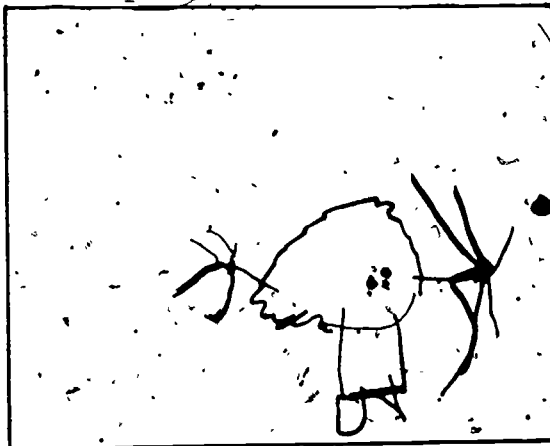


Fig. 21

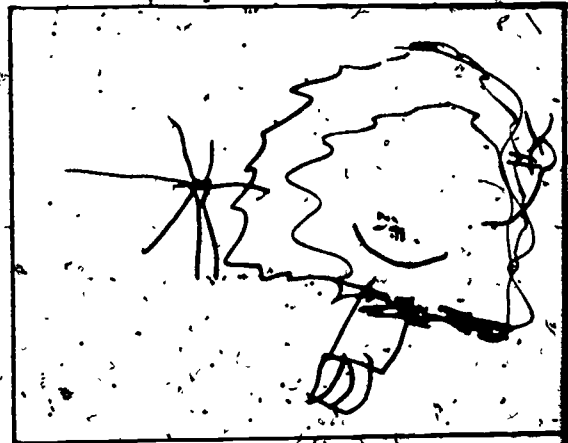


Fig. 22

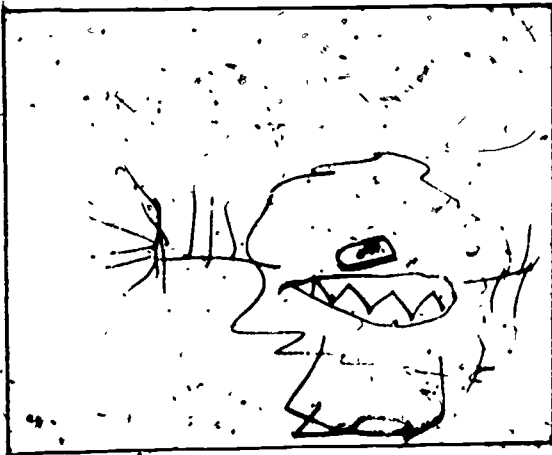


Fig. 23



Fig. 24



Fig. 25



Fig. 26

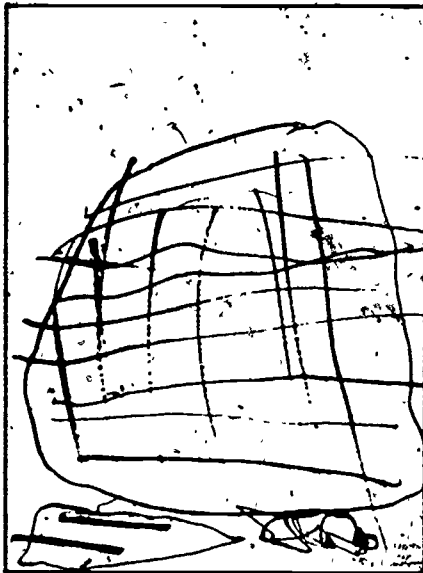


Fig. 27

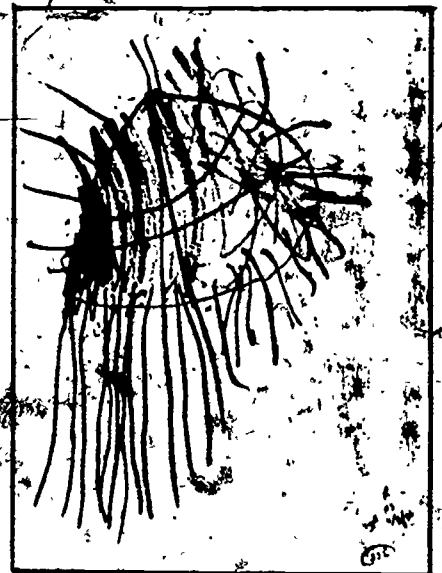


Fig. 28

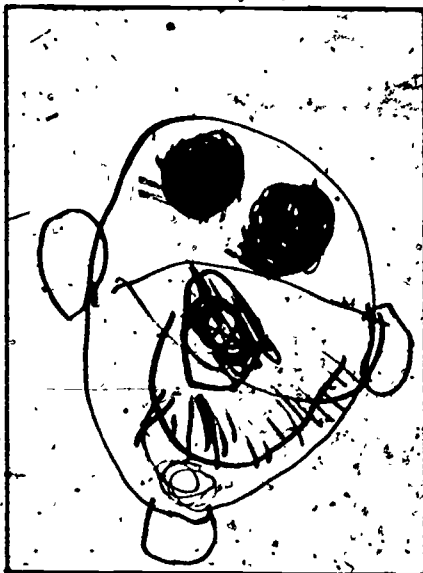


Fig. 29



Fig. 30

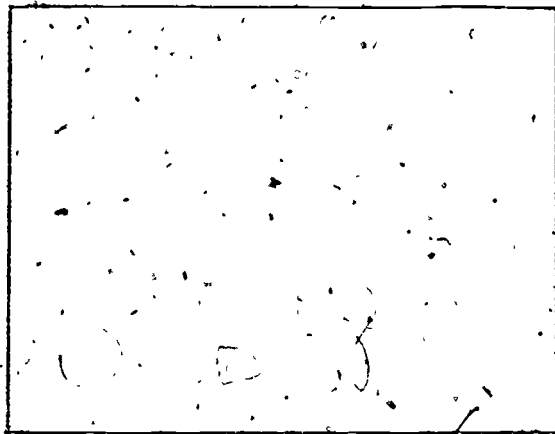


Fig. 31

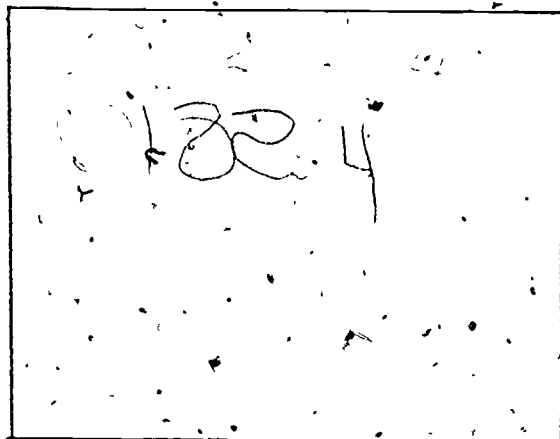


Fig. 32

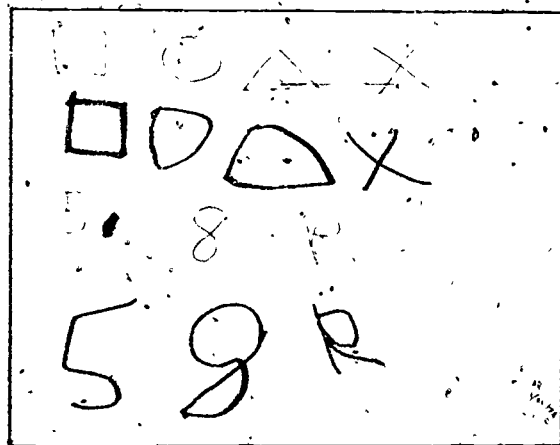


Fig. 33

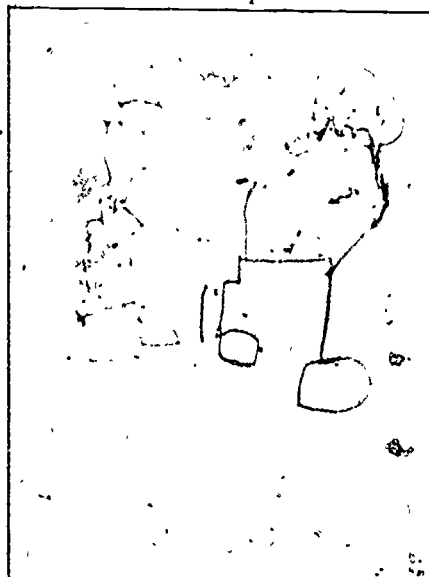


Fig. 34

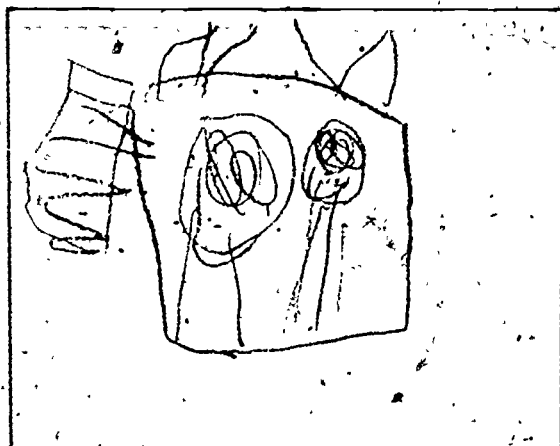


Fig. 35

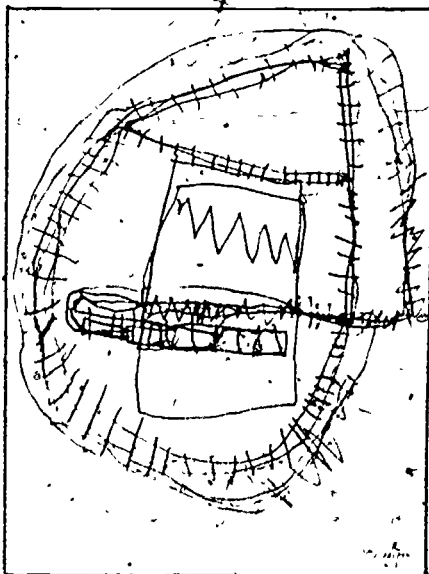


Fig. 36