

Film analysis included: 1) securing distances traversed by the ball in recorded time; 2) obtaining verbal description of the throws; 3) tracing body positions. Three measures of objectivity of trial verbal descriptions were secured: 1) a percentage of agreement between the main descriptive items of five matched descriptions - 94.1%; 2) a percentage of agreement between all items --71.4%; 3) a coefficient of correlation between the matched time readings of five throws --+.98 $\pm$ .004. The result under (2) dictated minute detail in the final descriptions.

### C. Results and Conclusions

Treatment of the data has yielded among others the following results and conclusions:

1. Initial velocities of the hard overhand throw range from eight feet per second average for a two-year-old girl to seventy-five feet per second average for a twelve-year-old boy.
2. Movement and timing features of the throw demonstrate an age series of patterns.
3. Six typical age patterns of movement for the whole throw were demonstrated. These six types, of which only four are clearly defined, can be assigned to an age schedule and show a developmental sequence as follows: (incompletely though briefly stated)

Stage I. Typical antero-posterior movements of body and throwing arm over feet which remain in place. (Type II) Type I is the incipient stage, showing scarcely any body movement as yet. Age 2 to 3, overlapping into 3 to 4.

Stage II. Introduction of arm and body movements in the horizontal plane over feet which remain in place. (Type III) Ages 3 $\frac{1}{2}$  to 5 years.

Stage III. Introduction of stepping with the unilateral foot (right foot in right-handed throwing); combination of antero-posterior and horizontal features. (Type IV) Ages 5 to 6.