

A U. S. Case of *Dicephalus tetrabrachius dipus* *

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The year 1953 was, in at least one respect, an *annus mirabilis*, witnessing as it did the birth of three sets of coalescent or fused twins, one in Würzburg, Germany, another in Brazil,¹ and a third in the midwestern United States, near Petersburg, Indiana. The Brazilian twins, girls, died a short time after birth; the second and third pairs, male, survived to the ages of five months and four months and eight days respectively.²

Fused twins are, of course, by no means a novelty. Among those of an earlier time may be mentioned the "Scottish Brothers" of the time of James III of Scotland, the Sardinian Ritta-Christina (1829), and the famous Tocci twins Giovanni-Battista and Giacomo, born in Turin in 1877. Twins lacking the lower extremities and fused in a common longitudinal axis include Minna and Minnie Finley, born in Ohio in 1870; a pair in Millville, Tennessee (1871); and the Jones twins, born in Tipton County, Indiana, in 1889.³

The mother of the Indiana twins, Mrs. Cecil Hartley, was twenty-eight years of age at the time of their birth and had previously borne four normal girls, three

* I wish to express here my thanks to Mr. J. E. Holwager, Director of the Division of Vital Records, State Board of Health, Indianapolis, for photostatic copies of the birth and death certificates; to J. D. Van-Nuys, M. D., Dean of the Indiana University Medical Center, and to Mr. E. S. Pulliam, Jr., Managing Editor of the *Indianapolis News*, for much helpful information; to Miss Helen Lightfoot, Documents Librarian, Indiana University Library, Bloomington, for bibliographical assistance; and to Mrs. Katherine Becker, Associate Editor of the *Journal of the American Osteopathic Association*, for kindly making available for my use the number of the *Journal* containing a case history by the physician in attendance.

For permission to use the two photographs of the twins, I am indebted to the generosity of the editors of *Life*.

¹ Born in Belo Horizonte to Jose Coelho, 34, and Francisca de Jesus, 25, and named Ana-Maria. According to the attending physician, Dr. Mario Ribairo de Silveira, this was a case of identical twins imperfectly separated. The twins had separate stomachs and small intestines but only one large intestine, one rectum, and a single urogenital system.

² As a rule the life of coalescent twins is of short duration. A two-headed and three-armed baby born in Detroit in 1930 died at birth as did also a baby born in Flint in 1946. The latter had two heads, four arms, two trunks, but only one pair of legs. The two spinal columns were joined above the pelvis. A two-headed baby boy born in Youngstown, Ohio, in 1950 lived for 20 hours. The heads were fixed in a face-to-face position. A two-headed girl child born in England in 1946 lived 50 hours. The record for longevity among coalescent twins born in recent years is apparently held by the Russian girls Ira and Galya, born in Moscow in 1937, who lived to the ripe old age of one year and 22 days. See "Two-Headed Babies", *Science News-Letter*, 64 (December 16, 1953), 405.

³ Gould and Pyle, *Anomalies and Curiosities of Medicine*, pp. 183-184.

INDIANA STATE BOARD OF HEALTH				Local No. <u>2008</u>	
DIVISION OF VITAL RECORDS				No. <u>101693</u>	
CERTIFICATE OF BIRTH					
NAME OF BIRTH		2. USUAL RESIDENCE OF MOTHER (Where does mother live?)			
Daviess <u>214</u>		a. STATE <u>Indiana</u> b. COUNTY <u>Pike</u>			
(If outside corporate limits, write RURAL)		c. CITY (If outside corporate limits, write RURAL.)			
Washington <u>523</u>		OR TOWN <u>Petersburg - Rural</u> <u>063</u>			
HOSPITAL OR INSTITUTION <u>Daviess County Hospital</u>		d. STREET ADDRESS <u>R. R. #1</u>		(If rural, give location.)	
FATHER'S NAME		a. (First)		b. (Middle)	
Donald (Daniel) Ray (Kay) Hartley					
5a. THIS BIRTH		5b. IF TWIN OR TRIPLET (This child born)		6. DATE OF BIRTH (Month) (Day) (Year)	
Single <input checked="" type="checkbox"/> Twin <input type="checkbox"/> Triplet <input type="checkbox"/>		1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd <input type="checkbox"/>		Dec. 12, 1953	
FATHER OF CHILD		NAME		8. COLOR OR RACE	
		a. (First) Cecil Ira Hartley		White.	
10. BIRTHPLACE (State or foreign country)		11a. USUAL OCCUPATION		11b. KIND OF BUSINESS OR INDUSTRY	
Missouri		Laborer.			
MOTHER OF CHILD					
MAIDEN NAME		a. (First)		b. (Middle)	
Margaret Campbell					
15. BIRTHPLACE (State or foreign country)		16. Children previously born to this mother (Do NOT include this child)		13. COLOR OR RACE	
South Carolina		a. How many OTHER children are now living? <u>Three.</u>		White.	
		b. How many OTHER children were born alive but are now dead? <u>None.</u>		c. How many children were stillborn (born dead after 20 weeks pregnancy)? <u>None.</u>	
18a. SIGNATURE		18b. ATTENDANT AT BIRTH			
<u>Kare J. Obertin, M.D.</u>		M.D. <input checked="" type="checkbox"/> Midwife <input type="checkbox"/> OTHER (Specify)			
18c. ADDRESS		18d. DATE SIGNED			
<u>514 E. Main St. - Washington, Ind.</u>		<u>Dec. 15, 1953</u>			
REC'D BY LOCAL HEALTH OFFICER		20. SIGNATURE OF HEALTH OFFICER		21. DATE ON WHICH GIVEN NAME ADDED	
<u>167</u>		<u>Harry G. Shields, M.D.</u>			
FOR MEDICAL AND HEALTH USE ONLY (This section MUST be filled out)					
22b. WEIGHT AT BIRTH		22c. LENGTH AT BIRTH		23. LEGITIMATE	
<u>10 LBS. 7 OZS.</u>		<u>Inches, or CM.</u>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
				24. Were precautions taken against ophthalmia neonatorum? <u>Yes.</u>	
Serological test for syphilis made on this mother? (a) During pregnancy? (State Yes or No) Date					
Delivery? (c) if no test was made, state reason. (State Yes or No)					
-1 DO NOT RECORD RESULT OF BLOOD TEST ON THIS CERTIFICATE					

Fig. 1

of whom were living. At her first prenatal examination (June) and her second (in September) the pregnancy seemed to be progressing normally. By early November, however, it had become apparent that the infant would be large and delivery almost certainly difficult, but it was not until November 15 that the attending physician first considered the possibility of twins. Because of the patient's highly toxic condition and the certainty of a complicated delivery,⁴ Caesarean section was performed

⁴ Preparations had originally been made for delivery in the patient's home. However, the fact that no dilatation of the cervix accompanied the labor pains of December 4 and 9 gave warning of trouble ahead.

WRITE PLAINLY WITH UNFADING INK - THIS IS A PERMANENT RECORD
Every item of information should be carefully checked. AGE should be stated exactly. FATHER'S should state CAUSE OF DEATH as far as known. PLACES OF BIRTH MEANS WHERE PERSON ACTUALLY DIED, NOT WHERE LIVED.
FURNERAL DIRECTOR'S LICENSE No. 1214

INDIANA STATE BOARD OF HEALTH Division of Vital Records CERTIFICATE OF DEATH				Local No. 2202 Death No. 10217
1. PLACE OF DEATH a. COUNTY Daviess		b. CITY (If outside corporate limits, state ST. RAIL.) Washington		2. USUAL RESIDENCE (When deceased lived here) a. STATE Indiana b. COUNTY Pike
c. FULL NAME OF (If not in hospital or institution, give street address or location) HOSPITAL OR INSTITUTION Daviess County Hospital		d. STREET ADDRESS (If rural, give location) 5th & Walnut Sts.		3. CITY (If outside corporate limits, state ST. RAIL.) Petersburg
3. NAME OF DECEASED (Type or Print) a. (First) Donald Ray & Daniel Kaye Hartley b. (Middle) c. (Last)		4. DATE (Month) (Day) (Year) OF DEATH April 20th 1954		5. DATE OF BIRTH (Month) (Day) (Year) Dec' 12th, 1953
6. SEX Male		7. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (Specify)		8. AGE (In years) (If under 1 year, state (In days) (Months) (Years) (Weeks))
9. COLOR OR RACE White		10. USUAL OCCUPATION (Give kind of work) (If doing most of working life, even if retired)		11. BIRTH-PLACE (State or foreign country)
12. FATHER'S NAME Cecil Hartley		13. MOTHER'S MAIDEN NAME Margaret Campbell		12. CITIZENSHIP (What Country)
14. WAS DECEASED EVER IN U. S. ARMED FORCES? (If yes, give name of branch of service)		15. SOCIAL SECURITY No.		17. INFORMANT (NAME AND ADDRESS) Cecil Hartley, Petersburg, Ind.
MEDICAL CERTIFICATION				
18. CAUSE OF DEATH (State only one cause per item. See (a), (b), and (c).) (Type or Print) Acute Cordege dilatation				
19a. DATE OF OPERATION				
19b. MAJOR FINDINGS OF OPERATION				
19c. ACCIDENT (Specify)				
19d. TIME (Month) (Day) (Year) (Hour) OF INJURY				
19e. ATTENDING PHYSICIAN				
19f. SIGNATURE OF Attending Physician or Health Officer				
19g. ADDRESS				
19h. DATE SIGNED				
19i. RITUAL CREMATION (Specify) DATE				
19j. NAME OF CEMETERY OR CREMATORY				
19k. LOCATION				
DATE REC'D BY LOCAL HEALTH OFFICE				
SIGNATURE OF HEALTH OFFICER				
FURNERAL DIRECTOR				
ADDRESS				

Fig. 2

on December 12 at the Daviess County Hospital, Washington, Indiana. When it became apparent that the twins would live, they were immediately transferred to the James Whitcomb Riley Hospital at Indianapolis, the children's hospital of the Indiana University Medical Center.

Upon examination here the heads were found to be normal in features and contour. Each of the twins possessed a neck, a pair of shoulders, and a normal set of arms; and there were apparently two hearts and two stomachs.⁵ One of the twins

⁵ There is some uncertainty on this point, since X-ray photographs were not sufficiently clear to be con-



Fig. 3

had two lungs, the other only one. There was one umbilicus, one anus, and normal male genitalia. Ipsilateral response following stimulation of the feet indicated separate nervous systems, the right leg being controlled by Danny Kaye and the left by Donald Ray. Weight at birth was 10 pounds 8 ounces.

Both twins were cyanotic, the first-named almost continually, the latter occasionally. Owing to this tendency toward cyanosis, particularly during feeding, they were placed in oxygen for thirty minutes following the giving of the standard evaporated milk formula. Weight at the end of three months was 14 pounds.

clusive and permission to perform an autopsy examination was refused by the parents. Donald Ray appears to have had a normal stomach, while that of Danny Kaye was rudimentary and tubular in form.

One of the most interesting autopsies performed on a dicephalous child is that recorded in a pamphlet which appeared in Munich in 1517. The narrator, who describes himself as *der sieben freien Kunst und beider Aertzney-doktor*, writes that the child had two heads, four arms with perfect hands, two well-developed feet, one navel and female sex organs. The autopsy revealed the presence of two hearts, two livers, two lungs, two stomachs, two spleens, and two perfectly formed gall bladders. See Eugen Holländer, *Wundergeburt und Wundergestalt* (Stuttgart, 1921), pp. 65-66 and Fig. 15.

Although signs of pneumonia appeared in child A (Danny Kaye), no serious illness developed and the twins were released to the care of the parents on January 18. However, in February and again in March, respiratory trouble developed in both and on March 18 they were readmitted to the Riley Hospital, where the illness was

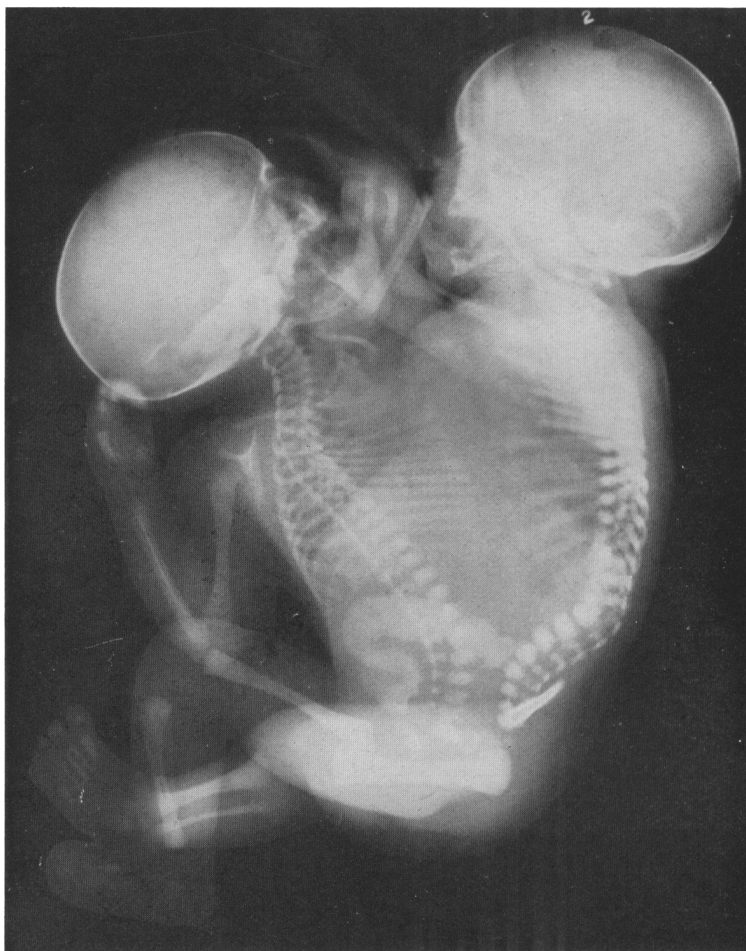


Fig. 4

diagnosed as bronchopneumonia and treatment with penicillin (300,000 units twice daily) was begun.

Since the respiratory condition continued to improve under treatment, the twins were again discharged on April 12. A week later, however, the state of their health

had become alarming and they were rushed to the Daviess County Hospital, the nearest their home. Here they were found to be suffering from both respiratory and circulatory trouble, with a temperature of 107.4 F at the time of admission. They died of acute cardiac dilatation the same afternoon.

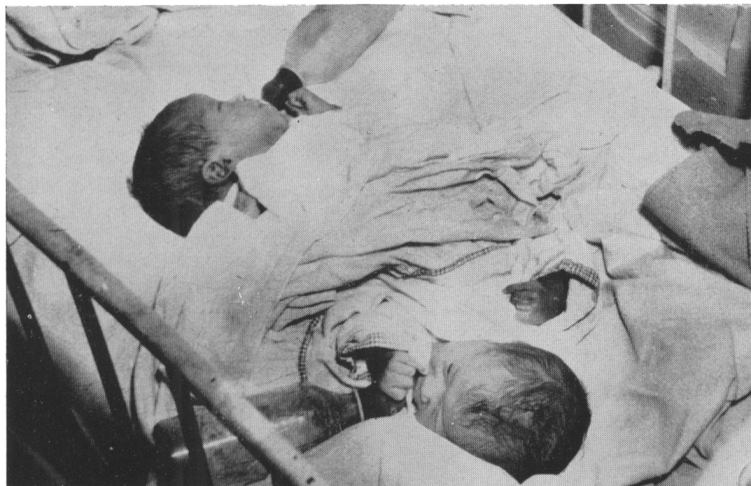
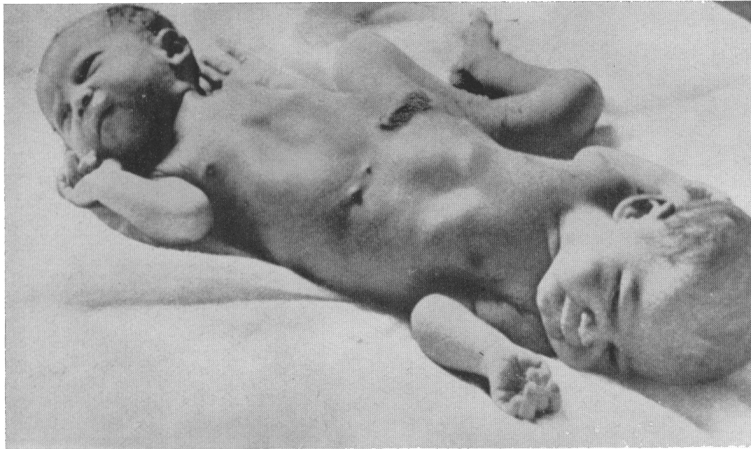


Fig. 5

Physiologically the child Daniel Kaye-Donald Ray was really twins (although registered with only one birth certificate), the result of an extreme case of Siamese twinning. What appears to happen in most instances is that the single egg forms two separate centers of organization in close proximity to each other. When expansion

and differentiation begin, they fuse instead of continuing as separately organized individuals, such as identical twins. In some instances fused or coalescent twins may be loosely conjoined, as in the case of Siamese twins, or the joining may be even more unnatural. One of the oddest of these fusions resulted in a monster having four arms and four legs but a fused chest and two heads so fused that each face was made up of halves, one half belonging to one trunk and the other half face to the other.⁶

In the case of the Hartley twins, the possibility of surgical separation was given only brief consideration, and that from a theoretical point of view only.⁷ Aside from the complications involved in the purely surgical aspects, there was also the moral and ethical standpoint to be considered. The most powerful deterrent was, of course, the refusal of the parents to permit an attempt at separation.

Throughout, the parents steadfastly resisted all pressure to persuade them to capitalize on the twins, at one time refusing an offer of \$ 1000 a week for the privilege of exhibiting them. This attitude was all the more commendable in view of the fact that the family was in straitened financial circumstances, although the condition was somewhat alleviated later by gifts of clothing, a refrigerator, and other items.

⁶ See S. I. N. Banks and L. Myers, ,, Dicephalus dipus tribrachius ", *South African Journal of Medical Science*, XX (1955), 1-4; T. W. Roddie, ,, Case of uniumbilical-dibrachidicephalic monster ", *British Medical Journal*, I (1956), 552-554; D. Jefferiss and G. S. Smith, ,, An unusual case of obstructed labour ", *ibid.*, II (1956), 1041 f.; D. J. Reddy *et al.*, ,, Dicephalus dipus tribrachius with associated anomalies ", *Journal of the Medical Association*, XXVIII (1957), 317-318. A wealth of material on the subject is to be found in Holländer, in George M. Gould and Walter L. Pyle, *Anomalies and Curiosities of Medicine* (New York, 1956), and other works on teratology.

⁷ Such an operation was successfully performed in 1939 on the two-headed infant of Mr. and Mrs. Emory Herron, of Bristol, Tennessee. A second head, which projected from the base of the skull of the normal one, was removed by Dr. J. C. Statzer, of Bristol. The child died a short time thereafter, but not, apparently, as a result of the excision.

SUMMARY

On 12th December, 1953 a set of conjoined male twins was born to Mr. & Mrs. Cecil Hartley in Petersburg, Indiana (U.S.A.). The mother, aged 28, had previously given birth to four normal children.

Each of the twins had a neck, a pair of shoulders, two arms, one heart and one sto-

mach. One of them had two lungs, while the other had just one. Two nervous systems were found. The genitalia were normal.

Both twins died of acute cardiac dilatation on 12th April, 1954 having survived four months.

RIASSUNTO

Il 12 dicembre 1953 nacquero ai coniugi Hartley di Petersburg (Indiana, U.S.A.) due gemelli congiunti. La madre, di 28 ani, aveva già dato alla luce, in precedenza, quattro figlie normali.

I due gemelli avevano ognuno un collo, un paio di spalle, un paio di braccia, un cuore ed uno stomaco. Uno di essi aveva due polmoni, mentre l'altro ne aveva uno solo. Furono riscontrati due sistemi nervosi e gli organi genitali risultarono normali.

I due gemelli sopravvissero quattro mesi e morirono il 12 aprile 1954 per dilatazione cardiaca acuta.

RÉSUMÉ

Le 12 décembre 1953 deux jumeaux conjoints naquirent dans la famille Hartley de Petersburg (Indiana, U.S.A.). La mère, âgée de 28 ans, avait déjà donné naissance auparavant à quatre enfants normaux.

Chacun des jumeaux avait un cou, deux épaules, deux bras, un cœur et un estomac. L'un d'eux avait deux poumons, tandis que l'autre n'en avait qu'un. Il y avait deux systèmes nerveux. Les organes génitaux étaient normaux.

Les jumeaux survécurent quatre mois, mourant le 12 avril 1954 par une dilatation cardiaque aiguë.